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WILLEY RIDGE NATURAL GAS PROJECT

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
EXXON LABARGE PROJECT
Phase II

May 1985

DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
DEPARTMENT OF AGRICULTURE
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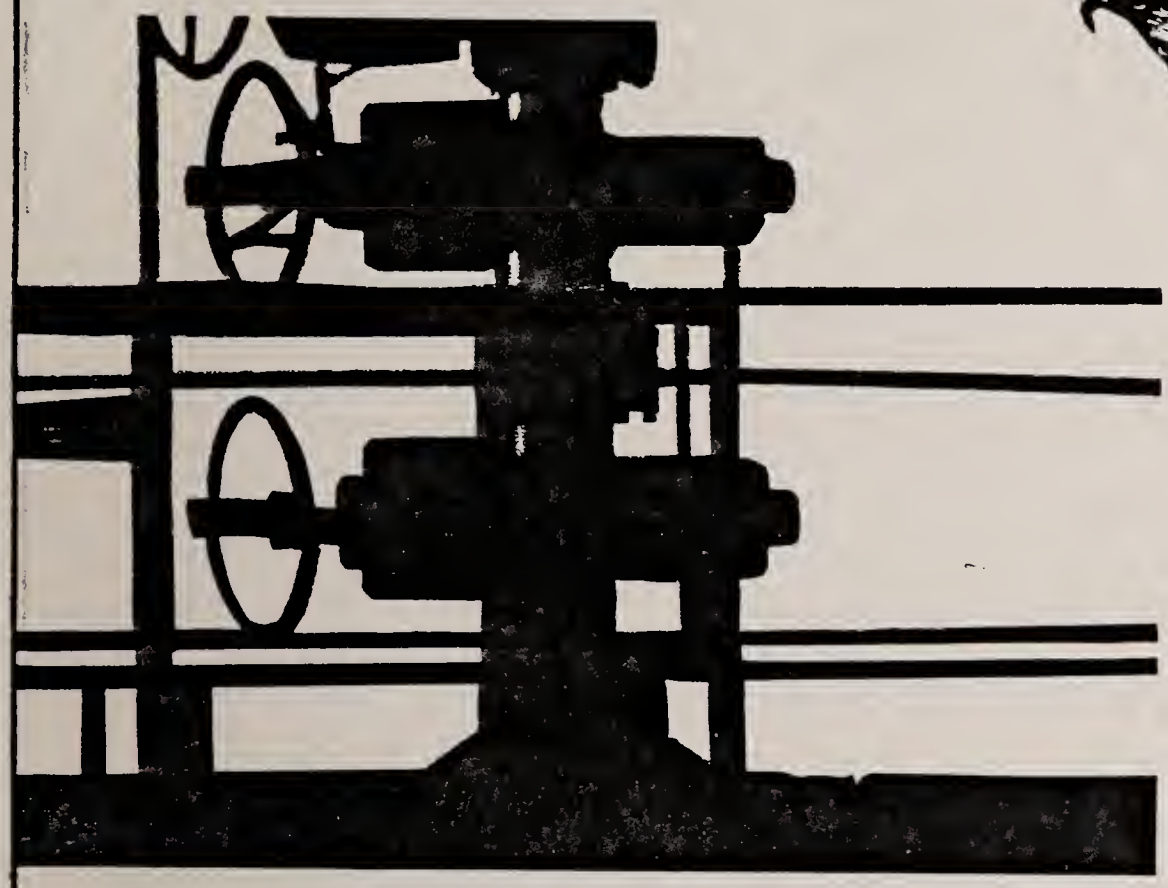

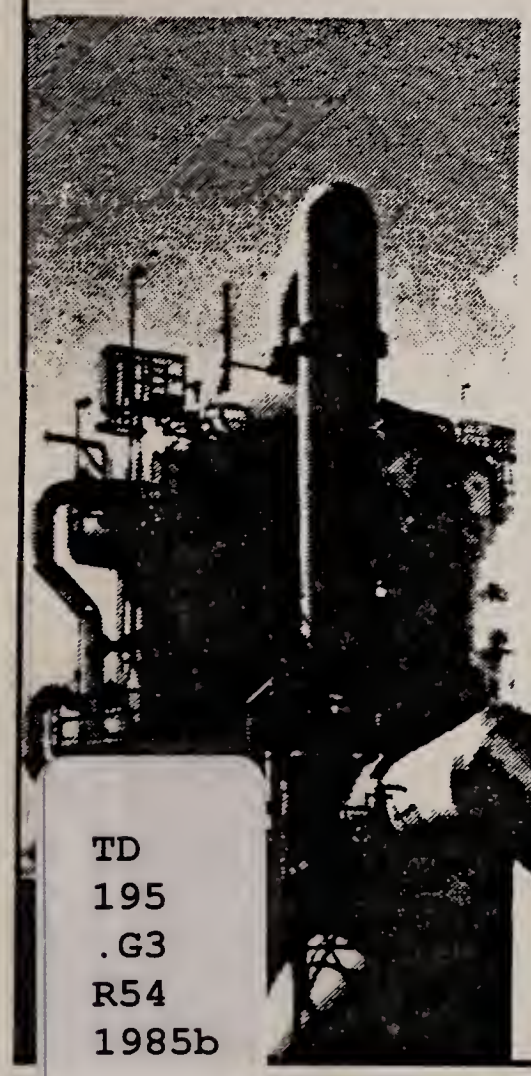

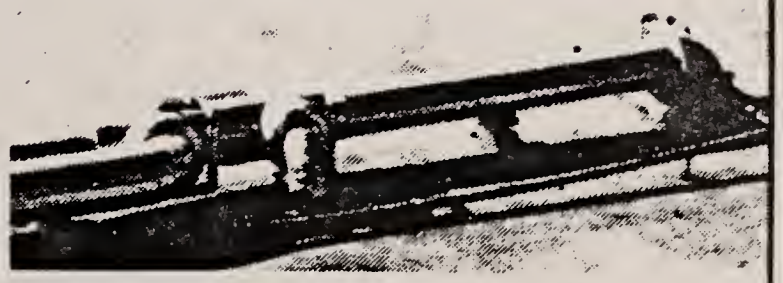

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BUREAU OF LAND MANAGEMENT
ROCK SPRINGS DISTRICT OFFICE
P.O. Box 1869
Rock Springs, Wyoming 82902-1869
(307) 382-5350

IN REPLY REFER TO:
1792 (FK 21)
(420)

May 1, 1985

Dear Reader:

In January 1985, Exxon applied to the Bureau of Land Management for a right-of-way to construct three gas processing modules of their LaBarge Project in Sweetwater County, Wyoming. In April 1985, they applied for a right-of-way for a second feed gas trunkline to serve these gas processing modules. Exxon has called this "Phase II" of the LaBarge Project.

Exxon's proposal modifies the location of the gas processing modules from that addressed in the Riley Ridge Natural Gas Project Environmental Impact Statement (EIS). Exxon's proposal for the feed gas trunkline is to parallel the trunkline recently authorized by BLM. Therefore, additional analysis of these changes is needed.

This Environmental Assessment (EA) on Phase II of the LaBarge Project is provided for your information. Any comments you may have are certainly welcomed. Comments received before June 8, 1985 will be considered in any revisions to this EA that may be needed and in the formulation of the Decision Record.

Comments should be directed to Donald H. Sweep, District Manager, Bureau of Land Management, P.O. Box 1869, Rock Springs, Wyoming 82902-1869.

Sincerely yours,

District Manager

#54984969

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DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

DEPARTMENT OF AGRICULTURE

FOREST SERVICE

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT WY-049-EA85-37

RILEY RIDGE NATURAL GAS PROJECT EIS

EXXON LABARGE PROJECT
PHASE II

Lincoln, Sublette, and Sweetwater Counties Wyoming

May 1985

Prepared By:

BUREAU OF LAND MANAGEMENT
ROCK SPRINGS DISTRICT
In Cooperation with
BRIDGER-TETON NATIONAL FOREST

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CHAPTER I

CHAPTER I

PROPOSED ACTION AND ALTERNATIVES

BACKGROUND

HISTORY

In 1981, the Riley Ridge Natural Gas Project was proposed as individual projects by:

1) Northwest Pipeline Corporation and Mobil Oil Corporation
2) Exxon Company, U.S.A.
3) American Quasar Petroleum Company and Williams Exploration Company

This natural gas development project included the proposal to construct, operate, and abandon a deep gas well field in western Wyoming; gathering lines for the transportation of sour gas within the well field to dehydration facilities; dehydration facilities; trunklines for the shipment of sour gas from the well field dehydration facilities to the treatment plants; three treatment plants; sales gas pipelines; power transmission lines for supplying power to the well field and treatment plants; and facilities for handling and transporting by-products (sulfur and carbon dioxide) to markets.

In 1982 (between March and July), the applicants applied to the Bureau of Land Management (BLM) for right-of-way permits to cross federal land managed by the BLM and Forest Service (FS). The impacts of the project actions and components were analyzed in the Riley Ridge Natural Gas Project Environmental Impact Statement (EIS) prepared jointly by BLM and FS (BLM and FS, 1983). In addition to the proposed project, the Riley Ridge EIS evaluated component and treatment plant siting alternatives and a no action alternative.

The Riley Ridge EIS, prepared in accordance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations, is the environmental documentation of Exxon's overall LaBarge Project proposal. It was determined through the Riley Ridge EIS and accompanying Riley Ridge Natural Gas Project Record of Decision (ROD), which was completed in January 1984, that the overall project proposal is in conformance with applicable BLM and FS land use plans. The ROD approved well field development, treatment plant locations, general trunkline locations, power transmission line locations, treatment plant access roads, gas venting conditions, and other associated development and implementation requirements for construction, operation, and abandonment. Figure 1 provides a general location map.

Immediately following the ROD, only Exxon proceeded with the implementation of their project plans. However, since they had not obtained markets for all of the sales gas and carbon dioxide, the principle products for sale, Exxon split their development schedule into two phases. Table I-1 provides a comparison of what was addressed in the EIS for all applicants, Exxon only, Exxon Phase I, Exxon Phase II, and Exxon Phase I and II combined.

In the spring of 1984, Exxon proceeded with plans to acquire power for their Shute Creek treatment plant. It was presumed that it would be provided by

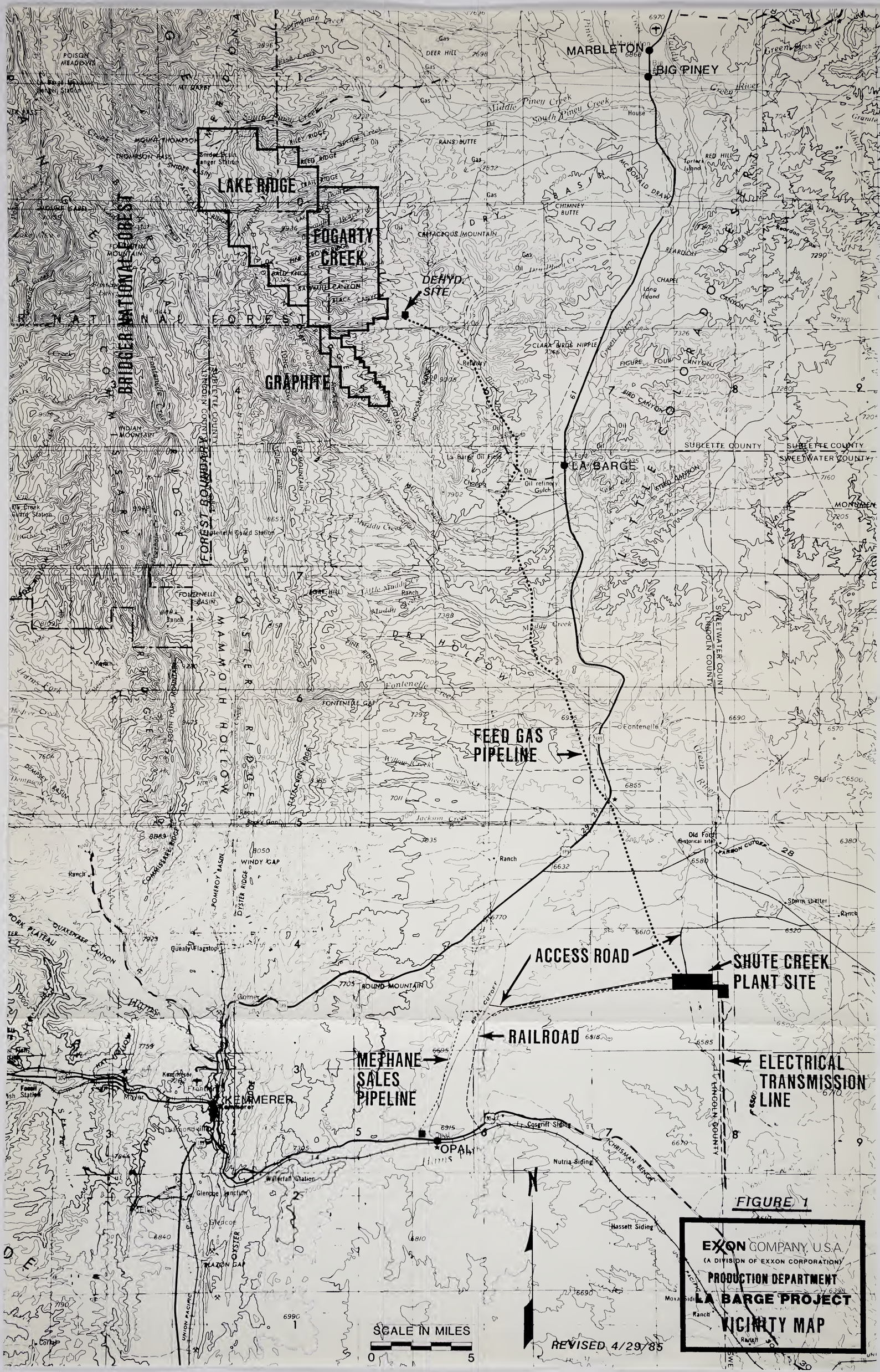


FIGURE 1

EXXON COMPANY, U.S.A.
(A DIVISION OF EXXON CORPORATION)
PRODUCTION DEPARTMENT
LA BARGE PROJECT
VICINITY MAP

TABLE I-1 - EXXON LABARGE PROJECT COMPARISON TABLE

	Riley Ridge EIS All Applicants	Riley Ridge 1/ EIS-Exxon	Exxon Phase I	Exxon Phase II	Exxon Phase I & II
Gas Processing Capacity (MSCFD) 2/	2,800	1,200	600	720	1,320
Feed Gas Trunkline					
Number 3/	3	1	1	1	2
Capacity (MSCFD)	2,800	960	960	960	1,920
Reserve Capacity (MSCFD)			360	240	600
Miles of Trunkline	103 3/	41	39	40	79
Acres Disturbed	1,065 4/	497	485	485	970
Acres Reclaimed	958 5/	487	475	475	950
Well Field					
Total Proposed Wells	238 6/	75	39	25	64
Acres Disturbed	483 4/	2,217 4/	1,845	700	2,545
Acres Reclaimed	2,767 5/	1,272 7/	995	375	1,370
Acres Occupied for Life of Project	1,201 5/	552 7/	850	325	1,175
Treatment Plants	3 8/	1	1 9/	1 10/	2
Acres Occupied for Life of Project	2,560 4/	640 5/	385	240	625
Access Roads (miles)	42 4/	27.5 5/	24.0	1.75	25.75
Access Roads (acres)	222 4/	167 5/	150	11	161
Power Transmission (miles)	104 4/	38 5/	15	0	1.5
Power Transmission (acres)	1,261 4/	456 5/	90	0	90
Methane Pipeline (miles)	133 4/	57 5/	17	0	17
Methane Pipeline (acres)	1,151 4/	691 5/	100	0	100
Carbon Dioxide Pipeline (miles)	158 4/	57 5/	50	0	50
Carbon Dioxide Pipeline (acres)	1,394 4/	691 5/	300	0	300
Maximum Annual Risk to Individual Receptor for exposure to significant Dose of H_2S (chances per 100,000) 11/	1.8	1.4	0.6	0.6	1.0
Emissions (tons/year)					
Sulfur dioxide	15,833	5,361.2	2,419.4	2,676.2	5,095.6
Hydrogen sulfide	373	75.6	188.5	193.8	382.3
Particulate matter	273	12.0	21.2	6.6	27.8
Nitrogen dioxide		157.2	272.6	374.5	647.1
Carbon monoxide	6,867	29.0	50.2	30.7	80.9

TABLE I-1 - EXXON LABARGE PROJECT COMPARISON TABLE (continued)

	Riley Ridge EIS All Applicants	Riley Ridge 1/ EIS-Exxon	Exxon Phase I	Exxon Phase II	Exxon Phase I & II
Investment (millions of dollars)					
Sublette County			406.5	409.5	816.0
Lincoln County			621.6	13.8	635.4
Sweetwater County			39.6	712.9	752.5
Workforce 12/					
Construction	4,241	3,056	2,891	526	3,417
Operations		774	256	252	508

1/ Shute Creek Alternative
2/ Million Standard Cubic Feet Per Day
3/ Number of Miles of Trunkline. Northwest - 42; Exxon - 41; Quasar - 20
4/ Table 1-15 Riley Ridge DEIS
5/ Table 1-16 Riley Ridge DEIS
6/ Table 1-5 Riley Ridge DEIS
7/ Based on Exxon disturbance representing 46% of total.
8/ Treatment Plants - Shute Creek (1,200 MSCFD); Craven Creek (400 MSCFD); and East Dry Basin (1,200 MSCFD) locations.
9/ Phase I Lincoln County at 600 MSCFD.
10/ Phase II Sweetwater County at 720 MSCFD.
11/ An acceptable individual annual risk for a sensitive receptor to a significant dose of H_2S [500 parts per million (ppm) instantaneous or 100 ppm for 15 minutes] has been determined to be 3 chances in 100,000.
12/ The numbers shown are peak estimates; peaks for construction and operation would occur in different years.

Utah Power and Light (UP&L). However, Exxon found they could obtain the same power from Pacific Power and Light (PP&L) at a significant savings. The Regional Boundary dividing the jurisdiction of the two power companies was the Lincoln-Sweetwater county line (1.75 miles east of the Shute Creek Plant). To take advantage of this savings Exxon applied to the BLM for a right-of-way to locate its compressor station in Sweetwater County (PP&L jurisdiction) since approximately one-third of its power need was for the compressor facility. BLM completed an EA and Decision Record in August 1984 (EA No. WY-042-EA84-82) and a right-of-way grant was issued in September 1984. In the meantime, Exxon appealed to the Wyoming Public Service Commission (PSC) for permission to purchase all of their power from PP&L and the PSC decided in favor of Exxon.

A brief chronology of key permitting that has occurred to date is as follows:

On April 29, 1984, the State of Wyoming Industrial Siting Council issued a permit to Exxon to construct and operate a gas processing plant in Lincoln County at the Shute Creek site (three 200 MSCFD modules) for a total processing capacity of 600 million standard cubic feet per day (MSCFD).

On May 1, 1984, the Bureau of Land Management granted to Exxon a right-of-way to construct, operate, and maintain a 600 MSCFD sour gas processing facility in Lincoln County at the Shute Creek Site within 308 fenced acres.

On May 22, 1984, the State of Wyoming Department of Environmental Quality-Air Quality Division issued an Air Quality Permit to Exxon to construct a 600 MSCFD sour gas processing plant.

On June 18, 1984, the Bureau of Land Management granted to Exxon a 200-foot right-of-way to construct, operate, and maintain a railroad spur in Lincoln County to the Shute Creek Plant site. Its length is approximately 13.5 miles with a parallel access/maintenance road.

On July 27, 1984, the Bureau of Land Management granted to Exxon a 100-foot right-of-way to construct, operate, and maintain a 9.4 mile access road in Lincoln County to the Shute Creek Plant site.

On September 11, 1984, the Bureau of Land Management granted to Exxon a right-of-way to construct, operate, and maintain a compressor facility in Sweetwater County on 40 acres and a 1.5 mile 400-foot-wide utility corridor between the Shute Creek Processing Plant and the compressor facility.

On February 11, 1985, the Bureau of Land Management granted to Exxon a right-of-way to construct, operate, and maintain a feed gas trunkline which will transport a maximum of 960 MSCFD of sour gas. This grant did not include the right to proceed with any construction. Such authorization shall be given solely by means of a written Notice to Proceed.

When Exxon decided to proceed with their plans to construct the remaining three processing modules they wanted to increase the processing capacity of each module from 200 MSCFD to 240 MSCFD. This was as a result of their reevaluation of the capability of the advanced technology being incorporated into the module construction. In screening this increase, Exxon found that the results of the air quality modeling performed, using the Shute Creek meterological data, showed that because of area topography the maximum

capacity which could be processed at the Shute Creek site (Section 14, T. 22 N., R. 112 W.) and still be in compliance with Wyoming Air Quality standards and regulations, was a little more than 600 MSCFD. Therefore, in view of maximizing operational efficiencies, Exxon applied to the BLM for a right-of-way to relocate the three remaining modules in Sections 18 and 19 of T. 22 N., R. 111 W., 1.75 miles east into Sweetwater County (Figure 1-2). This was selected by Exxon as the best alternative and is the basis of Exxon's revised project description .

Therefore, the proposed Phase II of Exxon Corporation's (Exxon) LaBarge Project would locate three of the six modules in Sweetwater County, Wyoming. Exxon's results of air modeling show that compliance with Wyoming Air Quality Standards and Regulations can be achieved. Exxon's total capacity to sweeten sour gas (remove hydrogen sulfide) would also be increased from 1,200 MSCFD to 1,320 MSCFD.

On January 14, 1985, the Rock Springs District received a right-of-way application and a revised project description from Exxon for their proposed Phase II facilities.

On April 22, 1985, the Rock Springs District received a right-of-way application for a Phase II Feed Gas Trunkline which was described in the revised project description submitted in January 1985.

PRESENT

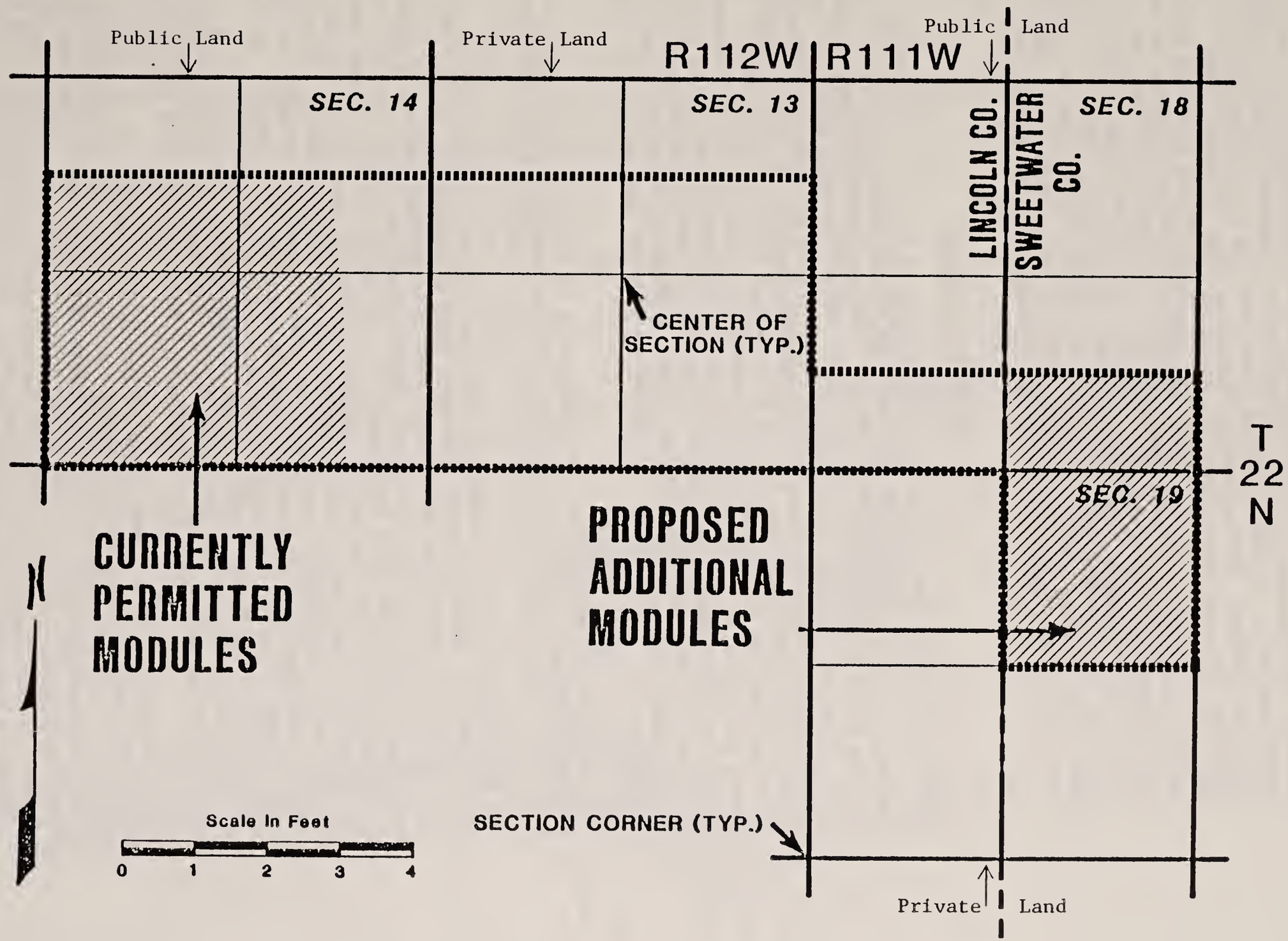
The three modules proposed in Phase II would have a processing capacity of 720 MSCFD. The three Phase II modules would be located in Sweetwater County (Figure I-2) and would be in conjunction with the previously permitted compressor station which will be constructed in the southeast quarter of Section 18, T. 22 N., R. 111 W. (EA No. WY-042-EA84-82). The facilities would also be located in NE 1/4 Section 19, T. 22 N., R. 111 W., which is private land.

In addition, to transport well field gas for this processing capacity, Exxon proposes to construct a 28-inch diameter feed gas trunkline parallel to the already permitted 28-inch diameter trunkline (EA No. WY-041-EA4-97). The proposed second trunkline would be about 50 feet to the west of the permitted trunkline and pass through portions of Sublette, Lincoln, and Sweetwater counties. The second trunkline would be approximately 40 miles long and would be capable of transporting from 150 to 960 MSCFD of gas. Pipeline block valves would be installed at a spacing identical to the first trunkline.

The Phase II proposal would enable Exxon to process a total of 1,320 MSCFD of sour gas (Phase I and Phase II combined). This is an increase of 120 MSCFD from the capacity that was analyzed for Exxon in the Riley Ridge EIS (Table I-1). The sales gas (methane) would be transported from Exxon's facilities in Sweetwater County by pipeline along an alignment that has not yet been determined. In the recent Rangely Carbon Dioxide Pipeline EIS, the environmental impacts of a carbon dioxide (CO_2) gas pipeline were analyzed from the compressor station to Interstate 80 near Rock Springs and to Rangely, Colorado. This route may be proposed. In addition, Northwest Pipeline has applied for a right-of-way to transport Exxon's Phase I sales gas from Shute Creek, west to Northwest's Opal plant.

Figure I-2

SHUTE CREEK GAS PROCESSING PLANT SITE



The CO_2 removed from the natural gas would be transported to well fields to enhance the recovery of oil. Pipelines to transport the CO_2 are currently under analysis. A final EIS has been prepared for a pipeline to Rangely, Colorado (Rangely Carbon Dioxide Pipeline, BLM, February 1985). A Record of Decision has also been prepared on this CO_2 pipeline (Rangely Carbon Dioxide Record of Decision, April 1985). A draft EIS is being prepared which will analyze the effects of transporting CO_2 to Bairoil, Wyoming, and to Williston Basin, North Dakota. However, the Riley Ridge Record of Decision allows the venting of CO_2 until economic markets are found. It also provides for the venting of helium until final disposition of the gas can be made. The venting of CO_2 was also approved in a January 31, 1984, letter to Exxon (Appendix 1) from the BLM Rock Springs District Manager.

PURPOSE AND NEED

Exxon has applied to BLM for a right-of-way on S 1/2 S 1/2 Section 18, T. 22 N., R. 111 W. for the placement of three modules (units) of their LaBarge Project gas processing plant. This would change the proposal approved in the Riley Ridge ROD in two principal ways. It would move the three modules 1.75 miles to the east of the Shute Creek (Phase I) site into Sweetwater County and it would increase the processing capacity of the LaBarge Project from 1,200 MSCFD (analyzed in the Riley Ridge EIS) to 1,320 MSCFD. Exxon has also applied for a right-of-way to construct a second feed gas trunkline to serve the Phase II processing plant and to construct facilities for processing helium at their Shute Creek site. This environmental assessment (EA) is being prepared to analyze these changes. The proposed relocation of the processing modules and the second feed gas trunkline will be analyzed as the Proposed Action.

For the purposes of this EA, the plant site in Lincoln County will be referred to as the Shute Creek (Phase I) site, and the proposed plant site for Sweetwater County will be referred to as the Phase II site.

The Riley Ridge EIS used existing data from regional sources to complete a meteorological analysis which indicated that a processing capacity of 1,200 MSCFD could be located at the Shute Creek site without violating Wyoming air quality standards. Since the final EIS was prepared, site-specific data from the Shute Creek plant site (Section 14, T. 22 N., R. 112 W.) have been applied to the meteorological analysis. The data indicate that 600 MSCFD processed at the Shute Creek site would meet Wyoming air quality standards. However, the Prevention of Significant Deterioration (PSD) Class II increment at Opal Bench would be exceeded if additional processing capacity were located at the Shute Creek (Phase I) site. Figure I-3 indicates where the highest SO_2 concentration from Phase I would occur. When this is modeled together with other sources in the area, the Class II PSD increment is approached at Opal Bench. This is the reason for the proposed shift of Phase II facilities.

By separating the Phase I and Phase II facilities, emissions do not cumulatively affect Opal Bench because the Phase II site is east of the Phase I site and a wind from the north does not cause emissions from Phase II to blow towards Opal Bench. Under this proposed change, a wind from the west causes the highest consumption of the Class II PSD increment at South Dodge rim, east of the Phase II site (Figure I-4). In this case, Phase I and Phase II emissions result in a cumulative impact, but do not consume the Class II PSD increment. Therefore, location of the remaining three modules 1.75 miles to the east in Sections 18 and 19 (T. 22 N., R. 111 W.) was proposed.

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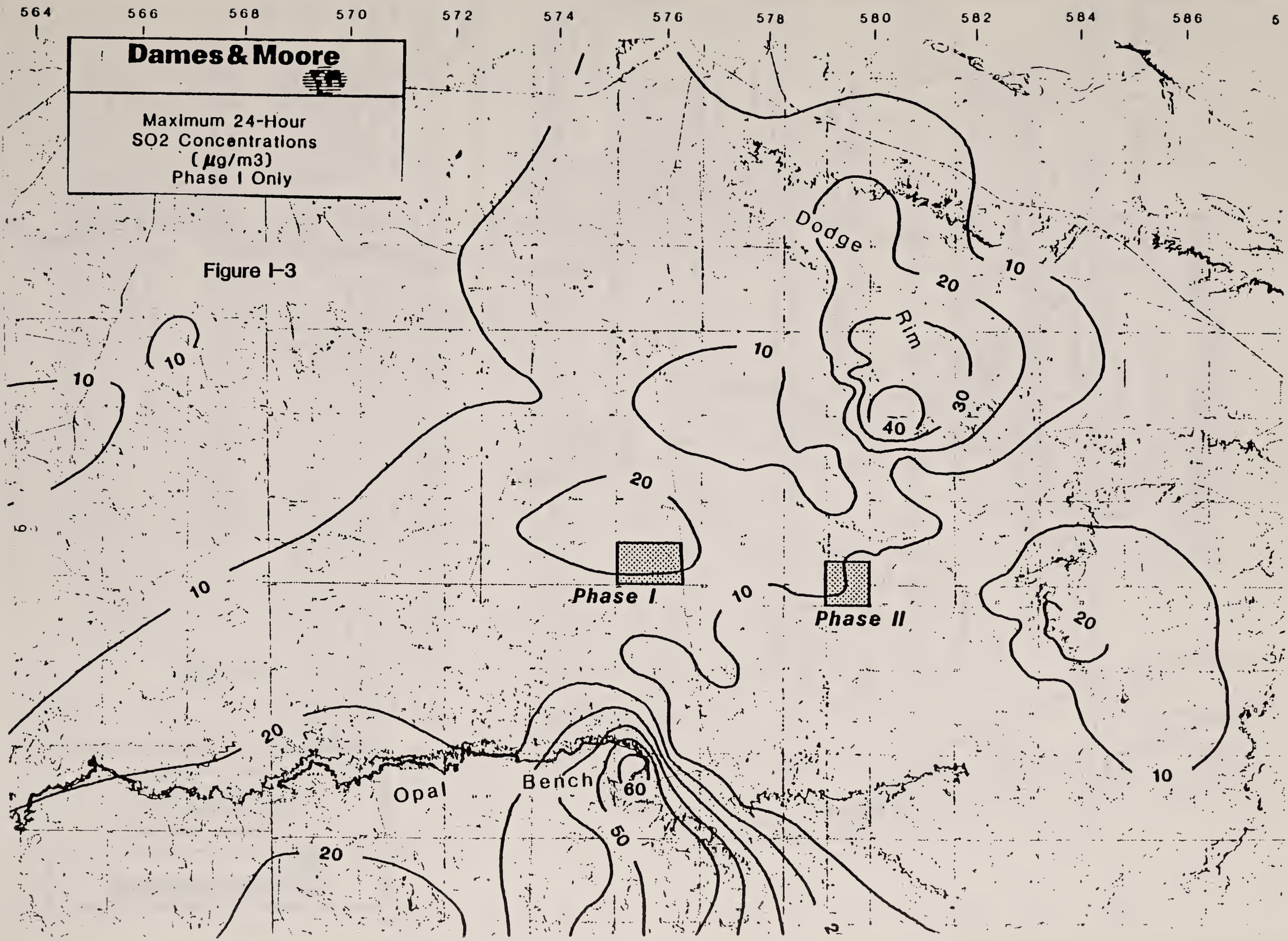
Maximum 24-Hour
SO2 Concentrations
(μg/m3)
Phase I Only

Figure I-3



Dames & Moore

Annual Average
SO_2 Concentrations
($\mu g/m3$)
Phases I and II

Figure I-4

Dodge

Rim

Phase I

Phase II

Opal

Bench

2
4
6
8
10
12
14
16

10

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

PREVIOUSLY AUTHORIZED ACTIONS

The facilities already permitted under Phase I include three gas processing modules (up to 600 MSCFD) and associated facilities such as:

- sanitary sewage facilities for plant personnel;
- sedimentation ponds;
- evaporation pond;
- feed gas trunkline; and
- two mancamps for construction personnel.

Other facilities associated with Phase I and approved at the Phase II site include:

- a CO_2 compressor and metering station; and
- an electric metering substation.

A 400-foot wide utility corridor between the Shute Creek plant site (Phase I) and the Phase II plant site has been approved (EA No. WY-042-EA84-82). It would contain:

- a 24-foot wide access road (1.75 miles long);
- a 36-inch diameter pipeline for CO_2 (1.75 miles long);
- a 230 kV transmission line (1.75 miles long) - owned and maintained by Exxon; and
- a methane pipeline (1.75 miles long, as part of the methane pipeline described in the Riley Ridge EIS).

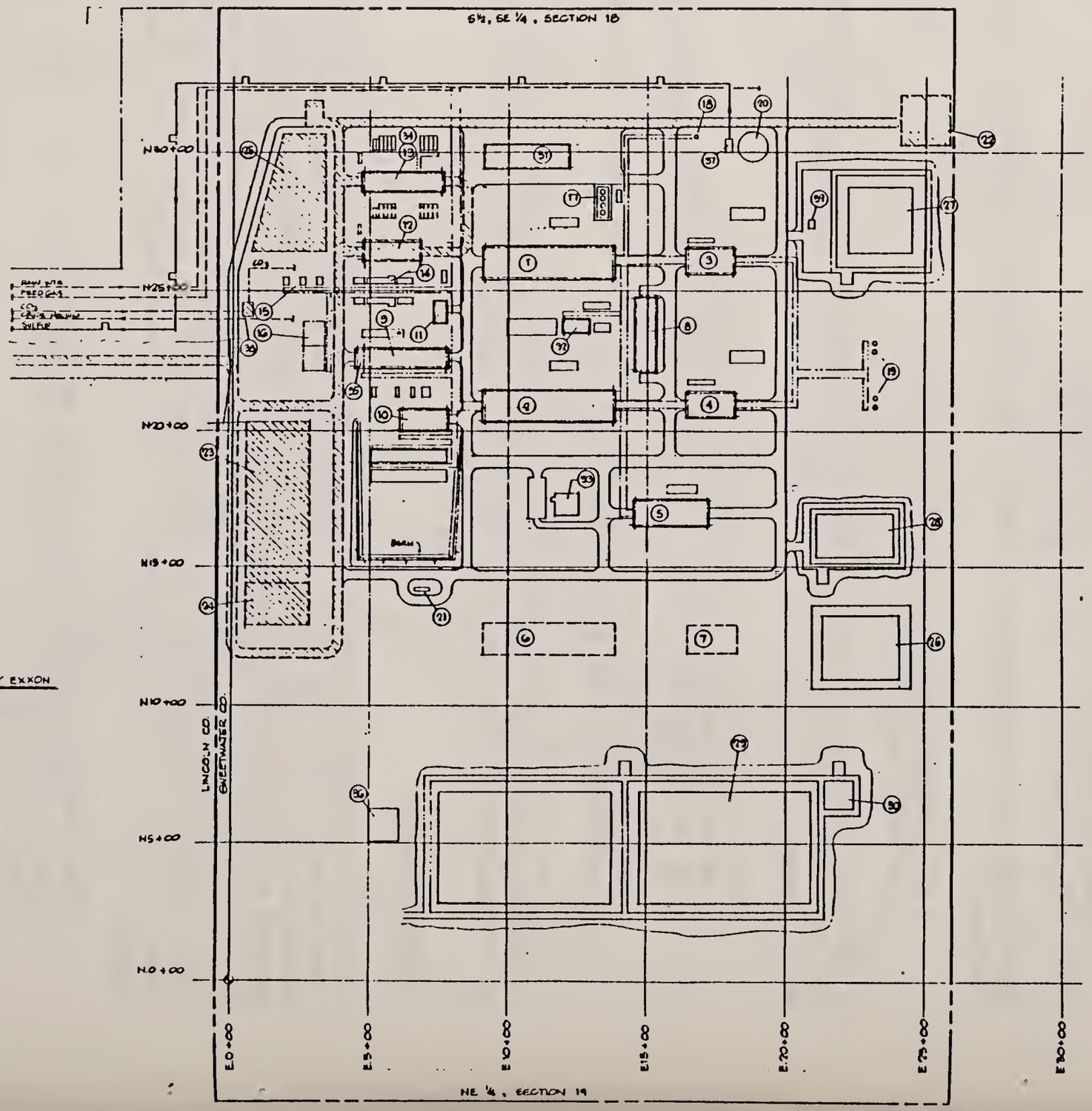
In addition, a 12.8 mile long 230 kV transmission line, presently under construction by Pacific Power and Light from the New Monument switch station to the substation at the Phase II facilities, has been authorized.

PROPOSED ACTION

The BLM has reviewed Exxon's application to the Wyoming Industrial Siting Administration (ISA) for Phase II of the LaBarge Project. The detailed description of the proposed action provided therein is adequate for the purpose of analyzing environmental impacts and for BLM's decision associated with the proposal. The proposed action will therefore be summarized in this EA. For a detailed description refer to Exxon's application to ISA, February 1985, (Volume 1, Chapter 2). The facilities proposed to be located on the Phase II site are shown on Figure I-5. The proposed facilities for Phase II include:

- three 240 MSCFD capacity gas processing modules;
- sanitary sewage facilities for plant personnel;
- evaporation ponds;
- a retention pond;
- an office, shop, and warehouse complex;
- a 40-mile feed gas trunkline;
- helium storage, transportation, and processing facilities;
- additions inside 400-foot wide utility corridor
  - molten sulfur pipeline,water pipeline,

Figure I-5



1. PROCESS BLDG # 1
2. PROCESS BLDG. # 2
3. SRU/TGU # 1
4. SRU/TGU # 2
5. UTILITY BLDG.
6. PROCESS BLDG. # 3 - FUTURE
7. SRU/TGU # 3 - FUTURE
8. H_2S/CO_2 RECYCLE COMPR
9. N_2/METH COMPR
10. REFRIG COMPR.
11. CO_2 LP COMPR
12. CO_2 SALES COMPR. - PHASE I
13. CO_2 SALES COMPR. - PHASE II
14. SWEET GAS DEHYDRATION - #1 & #2
15. REGEN. GAS HEATERS
16. NRU - BY OTHERS
17. MISC STORAGE
18. CO_2 VENT STACK
19. FLARE STACKS
20. SULFUR HOLDING TK.
21. PROPANE STG.
22. CO_2 SALES METERING - PHASE I - BY EXXON
23. ELECT. SUB-STA. - PHASE I
24. FF&L METERING STA - PHASE I
25. SEDIMENTATION POND # 1 - PHASE I
26. SEDIMENTATION POND # 2 - PHASE II
27. FIREWATER POND
28. QUENCH WTR. POND
29. EVAPORATION POND
30. SEWAGE TREAT. LAGOON
31. SHOP/WHS BLDG
32. GLYCOL/WTR HEATING BLDG
33. CONTROL BLDG
34. CO_2 PRODUCT PUMPS
35. L.P. N_2 BLOWERS
36. REFRIGERATION GROUND FLARE
37. SULFUR HOLDING TANK PUMPS
38. PIG RECEIVER AREA
39. FIREWATER PUMP HOUSE

SITE PLAN NOTES

I. VERTICAL DATUM - M.P. FINISHED FLOOR IN PROCESS BLDG. IS 100'-0"

II. THE COORDINATE (GRID) SYSTEM IS THE SAME AS PHASE I.

III THE LOCATION OF BUILDINGS, ROADS, PIPERACKS & ETC. IS IDENTICAL TO PHASE I (SAME COORDINATES & SAME RELATIVE POSITION) WITH THE FOLLOWING EXCEPTIONS:

1) SHOP/WHS IS IN DIFFERENT LOCATION

2) NORTHERN-MOST PRIMARY PLANT ROAD MOVED NORTH APPROX. 100' FROM PHASE I LOCATION

IV. NOTABLE DELETIONS (PHASE II VS. PHASE I)

1) NO ADMINISTRATION BUILDING
2) NO SULFUR LOADING FACILITIES
3) NO SLUG CATCHER

V. NOTABLE ADDITIONS (PHASE II VS. PHASE I)

1) CO_2 SALES COMPR. BLDG'S. - PHASES I & II
2) CO_2 SALES METERING (BY EXXON)

VI CROSS-HATCHED AREAS DENOTE PHASE I WORK

PRELIMINARY ISSUE
PHASE II - SITE PLAN
FOR PERMITTING PURPOSES

SCALE: 1" = 200'-0" 1-138

EXXON • PHASE I ORIG. NO. 27170

feed gas pipeline, and a
crude helium pipeline; and
expansions of both mancamps associated with Phase I.

Gas Processing Modules

The proposed action involves relocating three gas processing modules (720 MSCFD capacity) from the Shute Creek site (Section 14, T. 22 N., R. 112 W.) to the Phase II site (Sections 18 and 19, T. 22 N., R. 111 W.). Figure I-2 shows the location of the proposed action in relation to the currently permitted modules. Figure I-5 shows the locations of facilities on the proposed site.

Sanitary Sewage

Phase II sanitary sewage from plant personnel would be treated in an aerated lagoon (Figure I-5). After treatment in the lagoon, the sewage would be treated and piped to an evaporation pond.

Evaporation Ponds

Evaporation ponds would be used to dispose of water from the raw water treatment system, sewage treatment system, boiler blow down, and miscellaneous drains. A total of 18 acres of evaporation ponds would be built for the Phase II modules (Figure I-5). The total dissolved solids, as well as the main constituents of the water in the evaporation ponds, were analyzed for a 50 year period.

Retention Pond

A retention pond would be constructed to collect runoff from all disturbed areas. The size of the pond is based on a 10-year 24-hour rainfall of 1.43 inches.

Utility Corridor

The placement of linear facilities in the utility corridor is shown on Figure I-6.

The molten sulfur storage and transportation system would consist of pipelines, surge tanks, storage tanks, and a railcar loading facility at Shute Creek, Lincoln County. An above ground pipeline would be constructed to transport molten sulfur from the Phase II site to the loading facilities at the Shute Creek plant site. The diameter of the molten sulfur line would be 18 inches (including insulation) and constructed a minimum of 4 feet off the ground to ensure that pronghorn antelope passage is not impeded.

In addition to the molten sulfur pipeline, the approved 400-foot wide utility corridor between the Phase II facilities and those at the Shute Creek plant site would also contain other pipelines for raw water (4 inch diameter), feed gas (30 inch diameter), crude helium (6 inch diameter), a nitrogen purge line

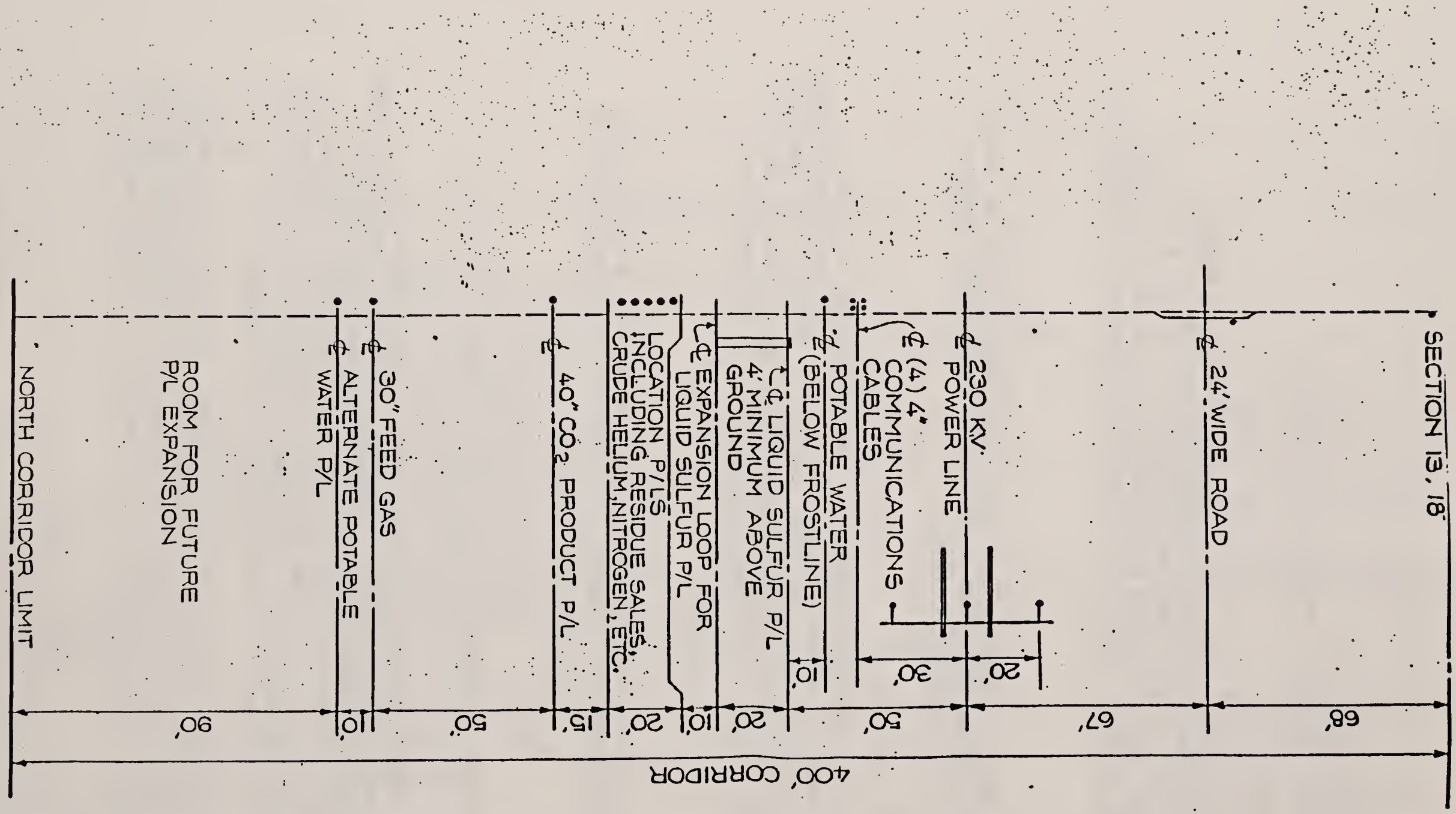


Figure I-6

ORDER No	C-27970	PHASE II – TYPICAL SECTION PIPELINE CORRIDOR	
SCALE	1" – 30'		
DRAWN E.L.	CHECK	Stearns Catalytic	STEARNS CATALYTIC CORPORATION
APPROVED			DWG. No.

(6 inch diameter), and a communication conduit (4 inch diameter). They would parallel the pipelines previously permitted when the compressor station was authorized. The pipelines for carbon dioxide and methane, an access road, and a 230 kV transmission line were analyzed in an EA (EA No. WY-042-EA84-82).

Helium Storage and Transportation

A liquid helium storage and transportation facility, if constructed to support the Helium Recovery Unit, would consist of elevated storage tanks and a truck loading facility.

Miscellaneous Facilities

An office and shop complex, located near the proposed Phase II modules, would serve those modules (Figure I-5). The Phase II modules would be controlled from a control building located near the proposed plant process building.

Feed Gas Trunkline

A 38.5 mile trunkline will be constructed in Phase I to transport dry gas from the well field to the gas processing facilities at the Shute Creek plant site. A second feed gas trunkline (28 inches in outside diameter and approximately 40 miles long), parallel to the first (EA No. WY-041-EA4-97) is proposed in Phase II. The two trunklines would have approximately 600 MSCFD more capacity (1,920 MSCFD) than Exxon would be authorized to process (600 MSCFD authorized, plus 720 MSCFD proposed).

The Riley Ridge EIS analyzed two trunklines from the Riley Ridge well field area, south to the then proposed processing plants of Exxon at Shute Creek and Northwest Pipeline Company at Craven Creek. Both trunklines analyzed were of the same size (30-inch diameter). The two Exxon trunklines would parallel each other for 38.5 miles.

After preparation of the Riley Ridge EIS, a single dehydration facility was proposed and subsequently analyzed and approved (EA No. WY-049-EA85-32) in Section 35, T. 28 N., R. 114 W. The proposal under Phase II would be to construct a second trunkline between the dehydration site and Shute Creek (Phase I) and Phase II facilities. The proposed action addresses the second pipeline.

Exxon has also obtained rights-of-way for multiple pipelines from owners of private land to be crossed. The haul roads used for construction of the first feed gas trunkline would also be used to construct the second trunkline.

Sales Gas (Methane) Pipeline

The sales gas pipeline for Phase II would carry methane. Since sales agreements have not been finalized, the alignment of this pipeline has not been determined. It is likely that it would parallel the pipeline currently authorized for sales gas from Phase I or would follow the alignment analyzed in the Rangely CO_2 EIS to Interstate 80. Analysis of any different alignment will be accomplished through preparation of an environmental assessment.

Temporary Facilities

Temporary components associated with Exxon's LaBarge Project include two construction and drill crew mancamps at Shute Creek and Black Canyon (south of Big Piney). Both camps would be expanded to accommodate the workforce associated with the construction of Phase II facilities.

NO ACTION (Alternative 1)

The No Action alternative would be to approve the facilities described in the Record of Decision (ROD) for the Riley Ridge Natural Gas Project. This would be the construction of six processing modules at the Shute Creek Site with a capacity of 1,200 MSCFD. The No Action alternative, however, cannot be implemented because the location of additional modules at the Shute Creek site would exceed the Class II PSD increment at Opal Bench.

NO ADDITIONAL RIGHTS-OF-WAY AUTHORIZED (Alternative 2)

This alternative would modify the Riley Ridge Natural Gas Project ROD by reducing the gas processing capacity for Exxon by 50 percent (from 1,200 MSCFD to 600 MSCFD) because the facilities at the Shute Creek site (Lincoln County) would exceed the Class II PSD increment. Neither the remaining three gas processing modules and associated facilities nor the second feed gas trunkline would be authorized. There would be 360 MSCFD reserve capacity in the authorized trunkline because the capacity of the trunkline would be 960 MSCFD while Exxon is only authorized to process 600 MSCFD of gas at the Shute Creek plant site. There would still be a utility corridor (1.5 miles long) between the facilities at the Shute Creek site and the compressor station in Sweetwater County. It would contain a 24-foot wide access road, a 36-inch diameter CO_2 pipeline, a 230 kV transmission line, and a methane pipeline. Exxon would also have an electric metering substation and a CO_2 compressor station in Sweetwater County.

REDUCED CAPACITY (Alternative 3)

This alternative would authorize Exxon a total gas processing capacity of 960 MSCFD at the combined sites in Lincoln (Phase I) and Sweetwater (Phase II) counties. This alternative was developed for several reasons:

1) Exxon does not currently have committed markets for the CO_2 or the methane that would be produced from a processing capacity of 1,320 MSCFD. They are engaged in negotiations to secure sales agreements. In light of this fact, an alternative analyzing a lower gas processing capacity (960 MSCFD) was developed.

2) The 1,200 MSCFD of capacity at the Shute Creek site (Lincoln County) described in the Riley Ridge Record of Decision could not be approved because it would violate Class II PSD increments at Opal Bench, south of the Shute Creek plant site. In addition, Exxon's proposal provides a processing capacity of 1,320 MSCFD, which is more than the 1,200 MSCFD approved in the Riley Ridge ROD (primarily because the processing capacity of the modules has been reevaluated by Exxon).

3) There was public controversy surrounding authorization of the first feed gas (sour gas) trunkline. This alternative would eliminate similar controversy on Phase II.

The authorizations for the Shute Creek site in Lincoln County would have to be amended to permit Exxon a maximum Phase I gas processing capacity of 480 MSCFD because they are currently authorized for a gas processing capacity of 600 MSCFD. This would have to include amended authorizations from the State of Wyoming. Exxon would also be permitted a maximum Phase II gas processing capacity of 480 MSCFD. The combined maximum capacity of 960 MSCFD would eliminate the need for a second feed gas trunkline because the capacity of the authorized trunkline (960 MSCFD) would be adequate to supply Exxon's processing modules. Since Exxon has already been granted authorization to operate at a 600 MSCFD capacity at the Shute Creek site, they would have to agree to the amendments reducing their permitted capacity.

The facilities onsite would be very similar to those described for the proposed action except that only two units, instead of three, would be built at each of the two sites. The fenced area around the facilities and the utility corridor between the two sites would be the same as under the proposed action.

CHAPTER II

CHAPTER II

AFFECTED ENVIRONMENT/ENVIRONMENTAL CONSEQUENCES

The affected environment described in the draft EIS and supporting technical reports for the Riley Ridge Natural Gas Project include the areas affected by the proposed gas processing facilities and feed gas trunkline. In addition, Exxon's application to the Wyoming Industrial Siting Administration (ISA) for Phase II contains numerous maps and tables which identify the environmental components potentially affected by Phase II facilities including the utility corridor between Phase II, the Shute Creek plant site, and the corridor for the second feed gas trunkline from the well field.

The environmental impacts described in Chapter 4 of Exxon's application to Wyoming ISA for Phase II adequately address the expected impacts in detail. A summary of those impacts is provided below by resource. Exxon's committed mitigating measures (Appendix 2) described in the Riley Ridge Record of Decision (ROD) and the voluntary measures committed to by Exxon in their permit (No. ISC-83-4) from the Wyoming Industrial Siting Council (Appendix 3) were considered in analyzing the impacts. The impacts described are those that would not be mitigated by the Exxon committed measures. A brief comparison table is provided for some of these important considerations (Table I-1).

PROPOSED ACTION

Air Quality

None of the air quality impacts appear to violate air quality standards. The most critical measure for meeting air quality standards appears to be the Class II Prevention of Significant Deterioration (PSD) increments. It was the potential for exceeding these increments at Opal Bench (south of the Shute Creek plant site) that resulted in the proposal to relocate the three gas processing modules in the proposed action.

The major source of air pollution during construction of Phase II would be fugitive dust (Table II-1). The highest fugitive dust emissions would occur in 1986, much of it from employee traffic on unpaved roads. The magnitude of this impact would decrease in the long term when construction is complete and traffic is reduced. Many of these particulates are fairly large and settle out quickly. Respirable particulates are smaller and make up about 50 percent of the particulates.

Estimated annual emissions for various air pollutants from the LaBarge Project are above and below the concentrations estimated for Exxon in the Riley Ridge EIS, but the emissions are all below the concentrations estimated for all applicants in the Riley Ridge EIS (Table I-1). The Riley Ridge ROD specified that if there were delays in project plans by any of the applicants, additional analysis could be required before the projects were permitted because of changes that may occur from that which was addressed in the EIS.

EXXON LABARGE PROJECT PHASE II
WYOMING INDUSTRIAL SITING APPLICATION

Table II-1 Summary of Fugitive Emissions Phase II (tons/year)

Source	Year 1985	1986	1987	1988
Gas Treatment Plant Construction	1,102	1,655	1,655	553
Corridor Construction	--	380	--	--
Employee Traffic on Unpaved Roads	3,605	5,369	2,890	252
Construction of feed gas pipeline	--	--	160	--
TOTAL	4,707	7,404	4,705	805

Source: ERT 1984

Tables II-2 and II-3 show maximum modeled pollutant concentrations. Maximum concentrations would not exceed either the National Ambient Air Quality Standards (NAAQS) or the Wyoming Ambient Air Quality Standards (WAAQS). The maximum consumption of the available 24-hour sulfur dioxide increment would be 96 percent. This includes both Phases I and II of the LaBarge Project, Whitney Canyon, Texas Gulf, Tenneco, and Chevron Phosphate facilities.

Acid deposition rates have been estimated and are shown in Table II-4. The acid deposition rates are not expected to be significant. The pH change in Bridger Wilderness lakes from the Phase II project would be less than 0.0002 pH units. The cumulative impact of Phase II facilities and other sources would result in a change of less than 0.03 pH units in sensitive lakes.

This issue of acid deposition is very complex and extremely difficult to estimate. To derive estimates, ambient concentrations of acidifying pollutants were modeled and then, as a conservative assumption, were considered to all fall upon the ground. This deposition amount was then added on to the known or modeled background deposition rates to received a total value.

An oftentimes quoted significance level for deposition, taken from studies of acid sensitive watersheds in Scandinavia, is 4.5 kilograms per hectare per year (KG/HA-yr). At this rate of deposition, acidification of the watershed and ecological damage is considered likely to occur over time. At present, no significance level of deposition has been established for the Rocky Mountains of the United States.

Data on actual rates inside of the Jim Bridger and Fitzpatrick wilderness area are at present, incomplete. It has been suggested (Gibson, 1984) that the existing rate of deposition in the wilderness areas may be above that measured at the Half Moon and Exxon National Acid Deposition Program (NADP) sites. Due to the fact that all areas in the region receive rainfall containing more or less the same pollutants, the wilderness probably receives the same concentrations of pollutants in each unit volume of rainfall as the NADP sits. Since more rainfall can be expected at the higher wilderness elevations, there is more deposition of acidifying compounds. Therefore, the actual acid deposition may be somewhat higher than indicated on Table II-4. This is called the "orographic effect".

The monitoring of NADP sites currently underway will help to determine levels of significant acid deposition in the area, actual acid deposition rates, and the influence of the orographic effect.

Predicted maximum concentrations of SO_2, NO_2, and H_2S would be below levels that could be expected to result in direct adverse effects to sensitive plants species. Screening concentrations established by Argonne National Laboratories (ANL, 1980) are those pollutant concentrations which will have not adverse effect on sensitive plants used in the Argonne Study. These plants are listed in Exxon's Phase II PSD Permit Application on Table 10-1. The ANL screening concentrations are listed in Table II-5 along with the predicted maximum concentrations due to operation of the proposed Exxon Phase II facility and all other PSD facilities in the area (Phase I, Chevron Carter Creek Gas Plant, Whitney Canyon Gas Plant, FMC Trona, Chevron Phosphate, and Tenneco Trona). The results in the table indicate that no

EXXON LABARGE PROJECT PHASE II WYOMING INDUSTRIAL SITING APPLICATION

Table II-2 Comparison of Maximum Modelled Pollutant Concentrations (ug/m^3) from the LaBarge Project Phase I, Proposed LaBarge Project Phase II, and All Other Existing Sources[a] with Applicable Wyoming Ambient Air Quality Standards (WAAQS)

Pollutant	Averaging Period	Predicted Conc. Proposed and Existing Sources	Background[b] Conc.	Total Conc.	WAAQS
Sulfur Dioxide	Annual	15.8	9.4	25.2	60
	24-Hour	169.3	43.0	212.3	260
	3-Hour	958.0	132.0	1,090.0	1,300
Nitrogen Dioxide[c]	Annual	11.2	2.0	13.2	100
Hydrogen Sulfide	1/2 Hour[d]	10.8	14.0	24.8	40[e]
Carbonyl Sulfide	Annual	8.7	0.0	8.7	300[f]
	1-Hour	205.5	0.0	205.5	714[f]

Source: Dames and Moore 1984

[a] Includes Naughton Power Plant, Whitney Canyon Gas Plant, Texas Gulf Trona, Tenneco Trona, Carter Creek Gas Plant, and Opal Gasoline Plant.

[b] Extracted from Table 7-1 of the Phase II PSD Application. Background includes contributions from existing sources that were also modeled, and is therefore conservative.

[c] The conservative assumption was made that all nitrogen oxide emissions from the modeled facilities were in the form of nitrogen dioxide.

[d] Comparisons were made to modeled 1-hour concentrations as recommended by the Wyoming Department of Environmental Quality (WDEQ).

[e] Standards of both 40 and 70 ug/m^3 exist for hydrogen sulfide.

[f] Concentration limits proposed by WDEQ to protect against adverse health effects.

EXXON LABARGE PROJECT PHASE II WYOMING INDUSTRIAL SITING APPLICATION

Table II-3

Maximum Modeled Sulfur Dioxide Concentrations (ug/m^3) as Compared to PSD Class I and Class II Increments for LaBarge Phase I and Phase II, Whitney Canyon, Texas Gulf[a], Tenneco, and Chevron Phosphate[b] Facilities

Averaging Period	Maximum PSD Class II Concentration	PSD Class II Increments	Percent Consumption of PSD Class II Increment	Maximum PSD Class I Concentration	PSD Class I Increments
3-Hour	404.4	512	79	9.9	25
24-Hour	87.8	91	96	2.1	5
Annual	14.4	20	72	0.3	2

Source: Dames and Moore 1984

[a]Texas Gulf PSD permit has recently expired and is therefore no longer required to be included in increment consumption modeling.

[b]Chevron Phosphate is greater than 50 km from Shute Creek, therefore its inclusion in Class II increments is not required, but conservative.

Table II-4

Calculated Acidic Deposition Rates[a] in the Bridger Wilderness Area (kg/HA-yr)

Location	Baseline[b]				Baseline Plus Phase II			
	SO_2	NO_2	H_2S	COS	SO_2	NO_2	H_2S	COS
Hobbs Lake	0.68	0.10	0.001	0.003	0.85	0.11	<0.001	0.005
Section Corner Lake	0.76	0.10	0.001	0.006	0.99	0.11	<0.001	0.007
Black Joe Lake	0.76	0.14	0.001	0.004	0.85	0.14	<0.001	0.007
Seneca Lake	0.68	0.10	0.001	0.003	0.85	0.11	<0.001	0.005
Half Moon NADP	2.19	0.49	0.002	0.011	2.52	0.50	0.002	0.017
Exxon NADP	2.40	0.37	0.002	0.009	3.22	0.37	<0.001	0.014

Source: Exxon LaBarge Project-Phase II PSD Permit Application. (Dames and Moore 1984)

[a]Wet and dry deposition of sulfur and nitrogen from the compounds indicated.

[b]Existing sources at actual 1983 emissions, plus currently permitted Exxon Phase I 600 MSCFD plant, plus currently permitted Chevron Phosphate plant. Includes allowable and predicted upset and flaring emissions.

TABLE II-5

SCREENING CONCENTRATIONS FOR IMPACTS TO SOILS AND VEGETATION
COMPARED TO MAXIMUM PREDICTED CONCENTRATIONS

Pollutant	Averaging Time	ANL[1] Screening Concentrations (ug/m^3)	Maximum Predicted Concentrations (ug/M^3)[2,3]
SO_2	1-Hour	917	457
	3-Hour	786	297
	Annual	18	17
NO_2	4-Hour	3,760	53
	8-Hour	3,760	32
	Annual	100	3
H_2S	4-Hour	28,000	7

1 Source: Argonne National Laboratory (ANL), 1980.

2 LaBarge Gas Plant, Phases I and II, plus all other PSD sources, which included Carter Creek Gas Plant, Whitney Canyon Gas Plant, FMC Trona, Chevron Phosphate, and Tenneco Trona.

3 Concentrations for various averaging times less than 24 hours have been estimated following factors outlined in "Guidelines for Air Quality Maintenance Planning and Analysis, Vol. 10" (EPA, 1977b)

direct adverse impacts are expected on soils or animals. Because the predicted concentrations in all cases are small compared to the screening concentrations, no further analysis is considered necessary for air quality effects on vegetation and soils. Synergistic effects are unlikely at the concentrations modeled (Dames and Moore, 1985).

Phase II facilities are not expected to cause visibility degradation in either the Bridger Wilderness Area or the Fitzpatrick Wilderness Area.

Soils

The facilities would be located in two general soil groups: (1) soils of the terraces and floodplains, and (2) soils of the rolling to moderately steep dissected upland, high terraces; sideslopes; and fans. Average annual precipitation is 7 to 9 inches. An estimate of the amount of acreage disturbed is found in Table I-1. Construction of the Proposed Action (Phase II trunkline and plant site) would disturb approximately 736 acres of soils. No significant impacts are anticipated for soils assuming compliance with the recommended soil protection measures. The well field acreage has already been analyzed in the EIS.

Water Resources

The construction of Phase II would divert and rechannelize a small ephemeral tributary to Shute Creek. No significant impacts are anticipated.

Discharges to Shute Creek would occur and include up to 70 gallons per minute (gpm) of treated domestic sewage (over a 4-year period) and about 121 gpm of good quality process water between 1990 and 2030, meeting Wyoming DEQ water quality standards. Shute Creek is an intermittent Class IV stream. These discharges are not expected to have an adverse impact on water quality.

Plant site (Phase I and II) water supply needs will be obtained from two existing wells located in the southeast quarter of Section 14, T. 22 N., R. 112 W. Plant site ground water demands would range from a maximum of 150 gpm during construction to 1.6 gpm during operation. There may be a 5 to 10 foot drawdown in two existing wells with permanent water rights located 2 to 5 miles from the Phase II plant site. A third water supply well will be applied for if required.

Construction of the trunkline would cause only temporary impacts to ground water which would not be significant. Recharge is not expected to be adversely affected.

Land Use

Excluding the well field about 736 acres of land in Lincoln, Sublette, and Sweetwater counties would be disturbed by Phase II (trunkline and plant site) project construction. Approximately 475 acres would be reclaimed, leaving 261 acres committed to industrial use for the life of the project. The disturbed acreage figures for the well field (Table I-1) have already been analyzed in the Riley Ridge EIS.

Approximately 44 animal unit months (AUMs) of forage would be lost during construction; 13 AUMs would be lost for the life of the project. This amount represents less than one percent of the total AUMs authorized within allotments that would contain project components.

Vegetation

Approximately 736 acres would be disturbed, of which 475 acres would be revegetated. The main vegetation types (71 percent) in the area of the Phase II plant site and the feed gas trunkline are big sagebrush and greasewood. Ground cover would reach its former extent in all vegetation types in about five years. Shrub cover would take between 10 and 50 years to reach its former extent.

No known federally listed threatened or endangered plant species would be affected by Phase II.

Wildlife

The increases in disturbance and in human population due to construction associated with Phase II would result in the following adverse temporary impacts to wildlife: increased hunting and fishing pressure, poaching, and some vehicle-animal collisions. The level of impact is expected to be within the level of impact described in the Riley Ridge EIS. Because the other applicant projects analyzed in the Riley Ridge EIS would not be constructed at or near the same time, the level of Exxon's Phase I and II combined impact is expected to be lower than the impacts described in the Riley Ridge EIS.

While the capacity of Exxon's modules has been recalculated, the number of modules remains the same and the acreage occupied by the modules is slightly smaller (Table I-1). The utility corridor between the Phase I and Phase II sites will result in a small amount of additional disturbance for Exxon facilities.

Road kills could be expected to result in a peak increase of about 10 to 20 percent over the baseline of 105 mule deer and 15 pronghorn (winter of 1981-82) on Highway 189 between Big Piney and Fontenelle Reservoir.

The project is in critical yearlong pronghorn range. Exxon has funded an additional game warden in the area for three years. This combined with an environmental awareness program will help mitigate adverse impacts to wildlife from construction workers from Phase I and combined.

No threatened or endangered wildlife has been identified either at the location of the Phase II facilities, the utility corridor, or the trunkline route. The trunkline would pass through three miles of potential whooping crane habitat where it crosses Fontenelle and LaBarge Creeks. Because of the large area of habitat available both upstream and downstream and because construction would only be a short-term event, neither adverse impacts nor habitat loss are expected. The trunklines are expected to be only about 10 feet apart at these stream crossing rather than the nominal 50 foot spacing which will exist along most of the length of the pipeline. This and the procedure of constructing both pipeline crossings of LaBarge and Fontenelle Creeks at the same time (private land) would mitigate potential adverse impacts to both wildlife and habitat in the areas surrounding the stream crossings.

Two unnamed small tributary drainages of Shute Creek cross the Phase II plant project area. The nearest plant facility is located about 500 feet form the 100-year floodplain of the north drainage. Runoff control measures would contain sediment within the project boundaries. Therefore, no downstream aquatic effects are expected.

Water would be withdrawn temporarily from the Green River during construction. The withdrawals (approximately 1.2 gpm) represent less than one percent of the lowest flow recorded at the gauging station below Fontenelle Reservoir. Therefore, no measurable effects on aquatic biota or endangered fish are expected.

Recreation

As a condition of the first Industrial Siting Permit, Exxon is working with the Wyoming Recreation Commission, the Forest Service, and BLM to help alleviate the shortfall in recreation facilities used by project workers. This would also occur for Phase II.

Increases in recreation demand would occur in camping, driving for pleasure, hiking, fishing, horseback riding, and hunting. Most of this demand would be dispersed. A 13 percent increase in total recreation demand could be expected. Demand for hunting and fishing would expand about 30 percent. Most of this increase would occur between 1985 and 1990.

Habitat loss through direct disturbance and the increased acreage being subjected to human presence would result in some reduction in the number of big game animals available for hunting/harvest.

The project-related disturbance would not affect recreational areas, access, or significantly reduce the recreation land base.

Visual Resources

The facilities lie within the Wyoming Basin physiographic province. It has flat, sage covered, rolling lands with few distinguishing characteristics. The adverse effects of Phase II facilities on visual resources would be additive to the facilities which have been permitted. The impacts would be similar to and within the range of impacts described in the Riley Ridge EIS and the EA on the compressor station (EA No. WY-042-EA84-82).

Vegetation clearing, construction, and operations of the trunkline and plant facilities would be, for the most part, unnoticeable from highway viewing points.

Cultural Resources

Based on initial Class III surveys of the site of Phase II plant facilities, one additional site (in Section 18) would need to be mitigated (Summer 1985). The utility corridor between the Shute Creek plant site and the Phase II plant facilities in Sections 18 and 19 have been surveyed (400 feet wide). No significant sites were located on public lands. Two significant sites on private land were not mitigated.

Social and Economic Conditions

The construction and operation of the Phase II trunkline and plant facilities is expected to result in impacts to Sublette, Lincoln, and Sweetwater counties. The population increases from Phase II construction would overlap with the following projects: Chevron Phosphate Project, Rangely CO_2 Pipeline, Jim Bridger Power plant modification, and the Western Wyoming College Expansion. The greatest interaction between these projects would be in Rock Springs. The most interaction between construction-related populations of these projects can be expected in 1985, and to a lesser degree in 1986.

The population in Rock Springs fluctuated during 1980-1984, growing rapidly between 1980 and 1982, and dropping until mid-1984. The infrastructure and available housing is expected to be adequate to handle the population increase due to the interaction of these projects.

The construction of a CO_2 pipeline from the Shute Creek Plant to Williston Basin, North Dakota is currently being analyzed in an EIS. If this pipeline is constructed, it would also overlap, somewhat, with the LaBarge Project but the population increases associated with it would be very short-term and would occur when population increases associated with the other projects listed above are on the decrease.

The communities potentially affected by Exxon's proposed Phase II would include:

Counties	Municipalities
Sweetwater	Rock Springs
	Green River
	Granger
Lincoln	Kemmerer
	Diamondville
	Opal
	LaBarge
Sublette	Big Piney
	Marbleton
	Pinedale

School Districts

Lincoln School District No. 1
Sweetwater School District No. 1
Sweetwater School District No. 2
Sublette School District No. 1
Sublette School District No. 9

The projected number of additional students from Phase I and II construction would exceed the optimal capacity during the peak years (Table II-6) only in Lincoln County. However, the school district's maximum capacity would not be exceeded.

TABLE II-6
School District Projections

	Base	Project-Related	Peak	Long-Term	Optimum
Lincoln No. 1	1,190	21 (1984-85) 190 (1990-91) 150 (1992-93)	2,002 (1992-93)		1,802
Sweetwater No. 1	5,758	17 (1984-85) 311 (1985-86) 15 (1992-93)	6,881 (1991-92)	6,871 (1992-93)	7,290
Sweetwater No. 2	3,780	67 (1984-85) 233 (1985-86) 120 (1992-93)	4,634 (1990-91)	4,557 (1992-93)	5,850
Sublette No. 1	628	46 (1985-86) 13 (1991-92)	680 (1985-86)	600 (1992-93) 1,403 (1988-89)	876
Sublette No. 9	704	107 (1985-86) 30 (1991-92)	714 (1985-86)	590 (1992-93)	1,041 1,601 1/ (1988-89)

1/ Additional facilities are planned for completion by 1988-1989.

Building the three modules and associated facilities would result in long-term but minor tax revenue increases to Sweetwater County. Tax revenues to Lincoln County would be slightly lower than those described in the Riley Ridge EIS and the Technical Report prepared in support of the EIS.

The average annual workforce associated with all Exxon LaBarge Project development (Phase I and II) is shown in Table II-7.

TABLE II-7

ESTIMATED WORKFORCE 1985-1992

	1985	1986	1987	1988	1989	1990	1991	1992
All Worksites	3,417	2,662	1,840	1,149	1,117	1,511	576	508
Shute Creek	1,965	1,643	1,124	445	565	1,078	523	455
Construction	1,894	1,449	780	68	188	655	68	0
Operations	72	194	344	377	377	413	455	455
Specialized Const. Activities:	232	0	0	0	0	0	0	0
Wellfield	1,220	1,019	716	705	551	433	53	53
Construction	1,194	984	672	652	498	380	0	0
Operations	26	35	44	53	53	53	53	53

It is anticipated that a sizeable portion of the work force would come from local residents. Maximum use would be made of available housing in local communities. Use of construction camps, per diem, and busing would also help reduce adverse impacts to local communities. The expansion of Exxon's construction camps at Shute Creek and Big Piney would also help alleviate the project's adverse impacts to housing in local communities.

Population projections through 1992 indicate a slow, steady increase in each of the three counties (Tables II-8, II-9, and II-10).

The EA for the compressor station (EA No. WY-042-EA84-82) found that building the station in Sweetwater County rather than Lincoln County would result in long-term but slight revenue losses to Lincoln County and Lincoln County School District No. 1 and equivalent gains to Sweetwater County and Sweetwater County School District No. 2.

The Phase II proposals would result in more revenue for Sweetwater County (Table II-11). If it is assumed that the facilities would otherwise be located in Lincoln County, there would be equivalent losses to Lincoln County. However, due to the need to meet air quality requirements, the Shute Creek plant site in Lincoln County could not be used to locate additional modules. Table II-11 shows calculations for anticipated tax revenues based on projections for total investments in each county. The revenues for Sublette County would be from the second trunkline. Therefore, there would be no change from what was approved in the Riley Ridge ROD.

EXXON LABARGE PROJECT PHASE II WYOMING INDUSTRIAL SITING APPLICATION

Table II-8

Population Baseline
Lincoln County, Selected County Sub-areas and Selected Towns
1985 to 1992

Jurisdiction	1985	1986	1987	1988	1989	1990	1991	1992
Lincoln County	16,815	17,253	17,557	18,096	18,392	18,948	19,220	19,532
Star Valley CCD	8,373	8,522	8,721	8,898	9,044	9,221	9,441	9,757
K/D/O Area	6,768	6,979	7,121	7,275	7,385	7,615	7,749	7,803
LaBarge Area	461	496	498	491	478	473	785	481
Kemmerer Town	4,714	4,872	4,978	5,094	5,176	5,348	5,449	5,489
Diamondville Town	1,427	1,469	1,497	1,528	1,550	1,596	1,623	1,633
LaBarge Town	412	445	447	441	428	423	434	431
Opal Town	201	205	208	211	213	218	221	222

Sources: Mountain West Research - Southwest, December 1984; Denver Research Group, December 1984

EXXON LABARGE PROJECT PHASE II
WYOMING INDUSTRIAL SITING APPLICATION

Table II-9 Projected Baseline Population by Age and Sex
Sweetwater County

Year		0-14 Years	15-64 Years	65+	Total
1985	Total	13,507	29,060	2,653	45,220
	Male	6,867	16,454	1,221	
1986	Total	13,662	29,442	2,782	45,886
	Male	6,947	16,288	1,278	
1987	Total	13,853	29,742	2,905	46,500
	Male	7,046	16,172	1,333	
1988	Total	13,850	30,080	3,022	46,952
	Male	7,047	16,313	1,385	
1989	Total	13,774	30,275	3,136	47,192
	Male	7,014	16,290	1,436	
1990	Total	13,680	30,556	3,244	47,480
	Male	6,968	16,347	1,484	
1991	Total	13,483	31,027	3,378	47,888
	Male	6,871	16,572	1,545	
1992	Total	13,281	31,495	3,503	48,279
	Male	6,770	16,795	1,601	

Source: Mountain West Research - Southwest, November 1984

EXXON LABARGE PROJECT PHASE II
WYOMING INDUSTRIAL SITING APPLICATION

Table II-10

Population by Age and Sex Characteristics
Projected Baseline
Sublette County

Year		0-14 Years	15-64 Years	65+	Total
1985	Total	1,336	3,775	442	5,553
	Male	701	2,187	221	
1986	Total	1,313	3,836	459	5,608
	Male	687	2,227	228	
1987	Total	1,292	3,861	478	5,631
	Male	677	2,239	229	
1988	Total	1,272	3,846	503	5,621
	Male	656	2,226	245	
1989	Total	1,259	3,849	513	5,621
	Male	654	2,222	249	
1990	Total	1,257	3,853	521	5,631
	Male	658	2,214	254	
1991	Total	1,237	3,878	532	5,647
	Male	645	2,228	257	
1992	Total	1,220	3,851	537	5,608
	Male	631	2,211	260	

Source: Mountain West Research - Southwest, November 1984

TABLE II-11
PROJECTED REVENUES FOR LINCOLN AND SWEETWATER COUNTIES

Property Tax	Lincoln County	Sweetwater County
Investments	$635,400,000	$752,500,000
Assessment Rate	0.08	0.08
Taxable Value	50,832,000	60,200,000
Mill Levy		
County	45.43	10.73
School	25.00	37.84
Revenue		
County	2,309,298	645,946
School	1,270,800	2,277,968

Health and Safety

The main component of the proposed Phase II facilities that affects public health and safety differently than has been previously addressed is the second feed gas trunkline.

The Health and Safety Individual Risk Assessment for Exxon's LaBarge Project Sour Gas Trunkline (Exxon, 1984) analyzes the individual annual risk of exposure of sensitive receptors (such as isolated ranches and industrial sites) to a significant or lethal dose of H_2S from a trunkline rupture. Prior to the modeling done for this study, BLM determined that the individual annual risk of exposure to a significant dose (500 ppm instantaneous or 100 ppm for 15 minutes) must be less than 3 chances in 100,000. The risk of exposure to a lethal dose of H_2S (1,000 ppm instantaneous) must be less than 1 chance in 100,000. This was determined to be a "de minimus" risk category.

As a result of the modeling done for the risks for sensitive receptors within one mile of the trunkline, all receptors were determined to have less than 1 chance in 100,000 of being exposed to a significant dose (Table II-12).

After the first feed gas trunkline is built and operating the second trunkline would be built. This would result in a situation where heavy equipment would be crossing over the first trunkline on haul roads. This may pose some additional risks. However, the risks of a rupture from such crossings is expected to be minimal. The potential for problems could be further reduced by a requirement for 95 percent compaction of fill where the haul roads cross the first trunkline.

With two trunklines, the pressure required to transport the maximum capacity of gas for the processing facilities would be lower. This would not affect the probability of a rupture but it would reduce the amount of gas released in the event of a rupture, thereby reducing the risk.

The risks of exposure of individual receptors to significant doses of H_2S are all expected to be less than the 3 in 100,000 annual risk determined to be acceptable. In addition, the annual individual risks are also expected to be less than the 1 in 100,000 determined to be acceptable for a lethal dose. Exxon will have to submit an additional risk analysis, similar to the previous one, covering two trunklines.

NO ACTION (Alternative 1)

The No Action alternative for the gas processing facilities was not analyzed in detail because a detailed analysis of air quality, using site-specific meteorological data from the Shute Creek (Lincoln County) plant site, indicated that up to 600 MSCFD of sour gas could be processed without a violation of the Prevention of Significant Deterioration (PSD) increments. However, if another module were located at the same site, the PSD increments would be exceeded at the point of highest concentration (Opal Bench).

TABLE II-12
ANNUAL RISK TO RECEPTORS WITHIN 1 MILE OF THE TRUNKLINE
FOR THE MOST PROBABLE RUPTURE CASE
TWO TRUNKLINES

Receptor	Closest Distance to Trunkline (miles)	Direction from Trunkline	Individual Annual Risk of Exposure (Chances per 100,000) Significant Dose	Lethal Dose
Western Camp	0.48	Southwest	0.35	0.12
Calpet	0.62	Southwest	0.31	0.06
Rainbow Camp	0.97	West	0.10	0.006
LaBarge Creek Ranch	0.86	East	1.0	0.25
Fontenelle Creek Ranch	0.92	Southwest	0.09	0.007

Source: Exxon, 1985

NO ADDITIONAL RIGHTS-OF-WAY AUTHORIZED (Alternative 2)

Under this alternative, the additional requests for federal rights-of-way would be denied. This would preclude Exxons full development of their project. Exxon would not be able to fully serve their committed markets. In addition, other potential markets seeking CO_2 to enhance the recovery of oil from old fields would be forced to seek CO_2 elsewhere.

Exxon would also not be able to provide as much natural gas to the existing pipeline transportation system. This, in part, would result in inefficient development of their field. The project's purpose, to process 1,320 MSCFD of sour gas and produce 320 MSCFD of natural gas for consumers, would be curtailed, thus contributing 55% less domestic natural gas than the Proposed Action. This alternative would not help reduce national dependence on foreign supplies as much as the Proposed Action.

Communities in Lincoln, Sublette, and Sweetwater counties would receive lower revenues than if the proposed action were approved. This impact would be highest in Sweetwater County. Some of the communities have been anticipating that construction and operating personnel would be as described under the proposed action. If this alternative were implemented, the numbers of construction and operating personnel, as well as associated population numbers, would be lower.

This alternative would not meet the overall purpose of and need for the proposed action as described in the Riley Ridge Natural Gas Project EIS. The Riley Ridge ROD essentially approved the objective of the proposal. Because of these two points, this alternative will not be analyzed in detail unless all the other alternatives would result in potentially significant impacts.

REDUCED CAPACITY (Alternative 3)

This alternative would allow Exxon to supply most, if not all, of their current markets for CO_2, and natural gas or approximately 72% of their proposed CO_2 and natural gas production levels. Exxon's ability to develop additional markets would be more limited than under the Proposed Action because their gas processing capacity would be lower.

Exxon's capacity, in the Riley Ridge EIS, was originally estimated at 1,200 MSCFD (200 MSCFD per unit, for six units). Current estimates are that each unit can process up to 240 MSCFD. Most of the impacts associated with the relocation of two gas processing facilities would be similar to the Proposed Action, with the following exceptions. Air quality impacts would be reduced because the total capacity authorized would be 960 MSCFD instead of 1,320 MSCFD, a reduction of 27 percent. The revenues to Sweetwater, Lincoln, and Sublette counties under this alternative would be reduced from that given in Table I-1 for the Exxon Phase I and II investment.

The magnitude of impacts from construction related population is not expected to change, however, the duration of impacts is expected to be shortened because the third unit at each of the Shute Creek (Lincoln County) and the Phase II (Sweetwater County) sites would not be built.

If Exxon were to propose additional gas processing facilities in the future, the proposal would be analyzed in conformance with the requirements of the National Environmental Policy Act and would be related to the cumulative impacts projected in the Riley Ridge EIS.

Under this alternative, a second feed gas trunkline would not be necessary and, therefore, would reduce the controversy which could be anticipated. Concern was expressed by the public over the first trunkline about safety and property values, even after the Health and Safety Individual Risk Assessment for Exxon's LaBarge Project Sour Gas Trunkline indicated that the risks to public health and safety were considered to be acceptable.

Members of the public who were concerned included both individuals whose land would be crossed by the trunkline and individuals living in the general vicinity of the trunkline route. Individuals whose land will be crossed by the first feed gas trunkline have already signed agreements with Exxon providing for multiple pipelines. This is not expected to reduce the concern by other members of the public in the vicinity of the trunkline route.

UNAVOIDABLE ADVERSE IMPACTS

Implementation of the BLM and FS committed and required federal mitigation measures would reduce impacts associated with the project. Those impacts that would remain following mitigation would be similar to that described in the Riley Ridge Natural Gas Project Draft EIS, pages 4-138 thru 4-140.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Significant impacts and consequences would not differ from those described in the Riley Ridge Draft EIS (pages 4-141 and 142).

SHORT-TERM USE AND LONG-TERM PRODUCTIVITY

Long-term environmental consequences would not differ from those described in the Riley Ridge Draft EIS (page 4-140).

CHAPTER III

CHAPTER III

MITIGATION AND MONITORING

MITIGATION

All the "Required Federal Measures and Applicants' Standard Operating Procedures Designed to Reduce Environmental Impacts" listed in the Riley Ridge Natural Gas Project Record of Decision (attachment B) will continue to be required. Additional mitigation measures developed through supplemental environmental documents would also be required for implementation of the action. As the result of the consultation and coordination that has occurred, one additional mitigation measure has been identified as being needed. That measure is as follows:

> Measure: During the period of project construction, an additional temporary Wyoming Highway Patrolman should be financed to Patrol State Highway 372 between Interstate-80 and U.S. Highway 189.
>
> Rationale: There have been several fatalities and accidents along this stretch of highway since the start of Exxon's construction at Shute Creek. The Riley Ridge Draft EIS, Appendix D, Uncommitted Mitigation Measures (page D-3) states: "If site-specific problems with high volume traffic flows arise during project construction or operation, the Wyoming Highway Patrol may deem it necessary to allocate additional manpower to the Big Piney and/or Opal areas." State Highway 372 should be added to the area for additional manpower consideration.

MONITORING

Monitoring will be conducted as specified in the Riley Ridge Natural Gas Project Record of Decision. This will include not only standard compliance monitoring during construction and follow-up restoration but also implementation of the following Monitoring Plans:

1. Air Quality Related Values (AQRV)

2. Fisheries and Surface Monitoring (including monitoring stations above and below the point of discharge into Black Canyon Creek)

3. Groundwater Monitoring

CHAPTER IV

CHAPTER IV

CONSULTATION AND COORDINATION

This document was prepared by the Rock Springs District after consultation with Exxon Company, USA, the Pinedale Resource Area (BLM), the Kemmerer Resource Area (BLM), the Big Piney Ranger District, and the Forest Supervisor's Office of the Bridger-Teton National Forest.

Scoping was accomplished through the consultation noted above, and by utilizing the scoping comments received on the Riley Ridge EIS, follow-up action and contacts, public meetings held by BLM, public hearings conducted by the Wyoming Industrial Site Administration (ISA) and the Wyoming Department of Environmental Quality (DEQ), the distribution of Riley Ridge Project supplemental environmental documents and periodic preliminary scoping statements on well field development. Exxon has applied to ISA for a siting permit and to DEQ for a PSD (air quality) permit. These applications were also a source of information used in the preparation of this environmental assessment.

Consultation and coordination will continue through the comment process provided on this EA, and will include the input received during the public meeting to be conducted by BLM in LaBarge (May 22, 1985), and the results of public hearings to be held by ISA (beginning May 28, 1985) in Kemmerer, and DEQ hearings (to be scheduled) for the PSD permit.

REFERENCES

Dames and Moore, March 1984. Revision to Exxon LaBarge Project Phase II PSD Permit Application.

Exxon Company, U.S.A. and Environmental Research and Technology, Inc., September 1984. Health and Safety Individual Risk Assessment for Exxon's LaBarge Project, Sour Gas Trunkline.

Exxon Company, U.S.A., January 1985. Project Description and Right-of-Way Application (Phase II Plant Facilities).

Exxon Company, U.S.A., February 1985. LaBarge Project, Permit Application for Phase II, Supporting Data for Application for Amendment to Permit ISC 83-4.

Exxon Company, U.S.A., April 1985. Project Description and Right-of-Way Application, Phase II Feed Gas Pipeline.

U.S. Department of the Interior, Bureau of Land Management, May 1983. Riley Ridge Natural Gas Project, Draft Environmental Impact Statement

U.S. Department of the Interior, Bureau of Land Management, November 1983. Riley Ridge Natural Gas Project, Final Environmental Impact Statement.

U.S. Department of the Interior, Bureau of Land Management, January 1984. Riley Ridge Natural Gas Project, Record of Decision.

U.S. Department of the Interior, Bureau of Land Management, January 1984. Sour Gas Pipeline Alternatives, Supplemental Environmental Assessment, Riley Ridge Natural Gas Project.

U.S. Department of the Interior, Bureau of Land Management, July 1984. LaBarge Expanded Plant Site (Compressor Station, Sweetwater County), Supplemental Environmental Assessment, Riley Ridge Natural Gas Project (EA No. WY-042-EA84-82).

U.S. Department of the Interior, Bureau of Land Management, October 1984. Feed Gas Trunkline Record of Decision and Supplemental Environmental Assessment, Riley Ridge Natural Gas Project, (EA No. WY-041-EA4-97).

U.S. Department of the Interior, Bureau of Land Management, March 1985. Supplemental Environmental Assessments, Exxon LaBarge Project, Well Field Changes, (EA No. WY-049-EA85-32).

U.S. Department of the Interior, Bureau of Land Management, 1985. Powerline Right-of-Way Supplemental Environmental Assessment, Riley Ridge Natural Gas Project (EA No. WY-041-EA85-66)

APPENDICIES

APPENDIX 1

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
District Office
P.O. Box 1869
Rock Springs, Wyoming 82902-1869

IN REPLY REFER TO:
3109 (411)

31 JAN 1984

Paul W. Henderson
Exxon Company, U.S.A.
P.O. Box 1600
Midland, Texas 79702

Re: Approval to Vent CO_2 Gas
LaBarge Project
Lake Ridge Unit
Fogarty Creek Unit
Graphite Unit
Sublette County, Wyoming

Dear Mr. Henderson:

This office has reviewed your application dated August 23, 1983, to vent carbon dioxide (CO_2) gas from the above-referenced federal units, which are collectively referred to as the "LaBarge Project". Such gas would be vented after processing at the proposed gas plant site known as the "Shute Creek" site in Lincoln County, Wyoming.

Pursuant to CFR 43, part 3162.1; Notice to Lessees (NTL) 4-A; and the Riley Ridge Draft Environmental Impact Statement (DEIS), Final Environmental Impact Statement (FEIS), and Record of Decision (ROD) signed on January 25, 1984, we are hereby approving your application to vent CO_2 gas from the Lake Ridge, Fogarty Creek, and Graphite units with the following conditions:

1. Exxon shall continue to diligently seek a purchaser for the CO_2 gas.

2. Exxon shall report, in writing to the Bureau of Land Management, Rock Springs district office on an annual basis, beginning October 1, 1984 of its efforts and progress in securing a purchaser for the CO_2 gas.

3. If the Bureau of Land Management (BLM) and Minerals Management Service (MMS) jointly determine that a viable economic market for the CO_2 gas is available and not being utilized or pursued by Exxon, compensatory royalty may be assessed for the marketable volume of CO_2 gas.

4. The emissions of hydrogen sulfide (H_2S) and reduced sulfur compounds (COS) entrained in the CO_2 gas to be vented shall not exceed the ceiling of emissions as permitted by the State of Wyoming - Department of Environmental Quality. Further, ambient H_2S concentrations shall not violate the State of Wyoming - Department of Environmental Quality's ambient standard for H_2S.

Please direct any questions concerning this action to Robert Chase at (307) 382-5350.

Sincerely yours,

Mary D. Bracey

Assistant District Manager
Mineral Resources

Attachment

B.1 APPLICANTS' STANDARD OPERATING PROCEDURES

The applicants have stated that the following procedures will be followed in the construction, operation, and abandonment of the proposed Riley Ridge Project.

- *Drilling.*
  Solid wastes generated during drilling operations and testing would be incinerated as approved by the regulatory agencies or trucked to an approved sanitary landfill. At the conclusion of the drilling operation, or as needed, ash would be removed from the incinerator and placed in an approved sanitary landfill with non-combustible wastes. Any scrap metal would be sold to a recycling firm. Sewage would be handled according to state sanitary codes. At the conclusion of drilling operations, all sewage and waste would be removed from the site and taken to an approved sewage treatment plant or sanitary landfill.
- All above-ground facilities, foundations, and salvageable materials would be removed. Soil material would be restored over the well and the site returned to its original contour as soon as the well abandonment was completed. Each completed well site would be reseeded by the next growing season using techniques and methods described in the Erosion Control, Revegetation and Reclamation Program.
- Cement plugs would be placed at designated depths in the well to prevent migration of water or hydrocarbons and to protect any freshwater aquifers from contamination in accordance with applicable state and federal regulations.
- *Pipeline Construction.*
  Construction activities would be confined to the construction right-of-way along the length of the gathering lines, trunk lines, and sales lines. Only those portions of the right-of-way needed for construction would be cleared of obstacles and debris.
- Blading of the right-of-way would only be done as necessary for access for machinery and equipment, or for the trenching required for the installation of pipe. To further ensure vehicle safety, it may be necessary to construct temporary bridges or culverts across creeks and gullies on the working side of the right-of-way. Excavation and grading may be necessary to decrease the gradient and increase the stability of unstable slopes, especially in the steep terrain found in the well field. Grading and cut-and-fill excavation would be performed in a manner minimizing effects on natural drainage and slope stability. On steep terrain or in wet areas where the right-of-way must be graded at two elevations, or where diversion dams must be built to facilitate construction, the areas would be stabilized and restored upon completion of construction to resemble their original condition, or as required by the surface management agency or private landowner.
- Where fences are encountered along the right-of-way, adequate bracing would be installed at each edge of the right-of-way prior to cutting the wires and installing temporary gates. The opening would subsequently be controlled as necessary during construction. No gates or cattleguards on established roads over public land would be locked, blocked, or closed by the applicants. Any cattleguard damaged would be repaired to its original condition or replaced. If a natural barrier used for livestock control were damaged during construction, the applicant would adequately fence the area to prevent the escape of livestock.
- The depth of the pipeline ditch would vary with the conditions encountered. The cover from the top of the pipe to the ground level would generally be 2.5 to 5 feet. However, in areas where rocks would be removed by blasting, the cover would be 24 inches in populated areas and 18 inches in open country. At railroad and road crossings, specifications require a minimum of 3 feet of cover over the pipe at the drainage ditches along the roadbed. Working areas of approximately 100 by 350 feet would be needed on each side of road and railroad crossings.
- Generally, ditching operations would employ ditching machines in open areas and backhoes near rivers or in areas providing little working space; however, subsurface conditions may require different types of excavation. In areas where loose or unconsolidated rock is encountered, the ditch line may be ripped mechanically. If material encountered could not be ripped, it would be blasted. Blasting would be kept to a minimum and used only when necessary. An exception to mechanical excavation would be hand-digging to locate buried utilities such as other pipelines and cables.
- If blasting is necessary, the following safety precautions would be adhered to:

  1) In areas of human use, shots would be blanketed (matted).
  2) Landowners or tenants in proximity to the shot would be notified in advance so that livestock and other property could be adequately protected.

3) Before detonation, a clearance would be made to ensure that construction personnel and equipment and local residents are in no danger.
4) Fire protection measures would be implemented.

- Where buried utilities are encountered, representatives from the utilities would be consulted regarding the proposed route of the pipeline right-of-way.
- When crossing canals or irrigation ditches that are dredged to maintain depth, the pipeline would either span overhead or be buried underneath to a depth that would permit safe dredging operations.
- Roadbeds that support railroads would be crossed by boring a hole beneath the bed, rather than by ditching across the surface. All paved and improved roads would be crossed by boring where conditions permit. Other infrequently used, unimproved roads would be ditched and restored.
- Where the pipeline crosses rivers, the river crossing points would be carefully selected to minimize disturbance of riverbeds or banks.
- Creek flow would be maintained during pipeline construction. When crossing creeks with muddy bottoms, downstream sedimentation would be minimized by implementation of the following techniques: (1) Creeks flowing in areas where the channel is narrow would have the flow diverted around the construction area by blocking the channel upstream of the crossing site and diverting the flow through the use of pumps and/or flumes; (2) Creeks flowing in relatively flat areas where the channel is wide would have the flow diverted around the construction area by blocking a portion of the channel upstream of the crossing site. After construction is completed in that portion of the channel and the creek bottom is restored, then that portion of the channel would be reopened and the other portion blocked for construction.
- Every effort would be made to minimize the effects of construction on water flow. Upon completion of construction, the gradient of the stream would be restored as nearly as practical. Stream banks would be restored to resemble original grade, and breakers or riprap would be placed along riverbanks where necessary to control erosion.
- During construction of river crossings, the drainage or storm runoff from riverbank staging areas would be controlled via detention basins, evaporation pits, or straw bale filters to ensure that levels of suspended solids, grease, or oil would not exceed receiving water standards.
- Once the ditch has been backfilled, the right-of-way and other disturbed areas would be cleared of trash, brush, and other debris to prevent fire hazards. Some brush would be used to assist in stabilization and rehabilitation of the right-of-way. The right-of-way would be graded where needed, and all disturbed surfaces would be restored approximately to the pre-construction grade.
- Completed construction areas (including the right-of-way) and temporary access roads would be returned as nearly as practicable to the original condition or to that condition agreed upon between the applicant and the landowners or the authorized officer of the applicable agency. Right-of-way restoration techniques would be the same for federal, state, and private lands. All reasonable efforts would be made to control erosion and soil damage resulting from construction, rehabilitation, or maintenance and operations, including (but not limited to) construction of terraces, water bars, or other water diversion structures, and implementation of soil stabilization measures in erosion-prone areas.
- Routine aerial reconnaissance flights along pipelines would continue for the life of the project to check for erosion problems and revegetation success as well as possible gas leaks.
- *Sulfur Pipeline.*

  Overhead clearance warning structures would be placed on secondary roads prior to the sulfur pipeline crossings.
- Specific construction techniques would be selected for each creek crossing that would minimize erosion and siltation. Where the creek has a solid gravel base, permission would be requested for vehicle crossings; where an access road is in proximity, the existing access road would be used. Where the flow is too deep for vehicles to cross or the creek has a muddy bottom and there is no access road in proximity, flume pipes would be installed in the creek bottom and a roadway constructed on top for vehicle passage.

  Where the pipeline would cross creeks, the supports would be located and would be of such a depth, that high water would not affect the pipeline through scour action. Construction of creek crossings would be made in a manner that minimizes the effects of construction on water flow. The gradient of the stream would be maintained by removing all spoil from the creek bed upon completion of construction, and the creek banks would be restored.
- The right-of-way would be rehabilitated following construction. During the operation phase of the project, the right-of-way would be allowed to revegetate with shrubs; however,

trees growing where they could fall across the pipeline would be removed as necessary.

- *Other.*

  Other warning vehicles would accompany mobile heavy equipment on roads used by the public; signs would be installed warning the public of equipment operation areas.

- Quasar, Exxon, and Northwest would dispose of miscellaneous solid waste in an off-site approved sanitary landfill which has not been identified. Scrap metal produced by project construction would be sold to a recycling firm. Used oils, lubricants, and solvents generated during both the construction and operations phase of the project would be collected in tanks on the plant site until sufficient quantities are accumulated to sell these wastes to a re-refining firm.

- When the transmission line is complete, work areas would be cleaned and all trash collected. Dirt piles would be smoothed out; areas which have been cleared may be scratched and reseeded, if needed; and any access roads would be reclaimed.

- Operation of the transmission lines would involve patrolling the lines every month by fixed-wing aircraft, every six months by helicopter, and every year by foot patrol.

APPENDIX 3

PERMIT CONDITIONS TO PERMIT NO. ISC-83-4

VOLUNTARY COMMITMENTS BY EXXON

Environmental

1. All commitments and stipulations identified in the Riley Ridge Natural Gas Project EIS-Record of Decision which apply to specific components of the Exxon LaBarge Project shall apply to private and State lands, as well as federal lands. These commitments and stipulations are hereby incorporated into the Industrial Siting Permit by reference.

2. A comprehensive monitoring program will be developed by Exxon to determine water quality in the evaporation pond. This will include annual or semi-annual analysis of pond water and routine analysis of inlet water. Should abnormally high concentrations of contaminants be detected in the inlet water, corrective action would be taken to eliminate the problem before gross contamination of the evaporation pond occurs.

3. Exxon will remove all rails, ties and ballast from the railroad, will recontour the right-of-way to original contours, and will reclaim the railroad disturbances.

4. The sulfur storage areas will be contained within a dike and all drainage will be collected and routed to a surface runoff pond. The collected water will be allowed to settle and will be pumped, as necessary, to the evaporation pond.

5. The construction camp at Shute Creek will be temporarily reclaimed during the summer of 1986. If the plant is expanded in 1989-1990, the site will be reused for another camp or another site will be selected. Final reclamation will occur in 1991 or sooner depending upon construction plans for the third module.

6. The powerline from the Naughton Power Plant will be constructed in the same right-of-way as the railroad and the access road from Wyoming 240 east to the plant.

7. The entire plant site and construction camp will be fenced to control ingress of livestock and wildlife. There will be no fences along the railspur and access road except where required in specific areas to control livestock.

8. Exxon will coordinate revegetation plans, particularly the development of seed mixtures, with the Wyoming Game and Fish Department.

9. Exxon will undertake the necessary surveys to determine locations of raptor nests and sage grouse strutting grounds and will involve the Wyoming Game and Fish Department.

10. In order to deter construction workers from squatting on public and private lands, Exxon will provide RV parking space and associated facilities at each construction camp, will provide information on trespass laws and current laws regarding use of public lands by way of the Environmental Awareness Training Program, and will contractually require all contractors to discipline any employee found squatting on public or private land up to and including dismissal.

11. Exxon intends to avoid crossing the Seedskadee National Wildlife Refuge with any of its linear facilities.

12. Exxon will strictly prohibit guns on any job sites and guns at the construction camps must be signed-in and kept in gun lockers.

Socioeconomic

1. Exxon has committed to monitor certain demographic and residency characteristics of Exxon LaBarge Project employees. Their commitment states that they will monitor various items on a semi-annual basis.

2. Exxon has committed to providing mancamps in the Big Piney area and at Shute Creek to accommodate construction workers. Mancamp units and RV spaces will be available. These camps will also provide a variety of amenities.

3. Exxon will conduct a housing monitoring program to assess residency patterns of workers living outside the construction camps.

4. Exxon will provide prospective workers with current information on housing availability and cost alternatives at the mancamp and in local communities to facilitate their location decision.

5. Medical personnel, fire protection, and security services will be available at the plant site and the construction camps. An emergency ambulance will be available at the construction site to transport injured workers to the hospital. Helicopter service will be used if available and required by the circumstances.

6. Exxon offers a resettlement package to regular Exxon employees assigned to jobs at Company convenience that require relocation to Wyoming.

General

1. Exxon shall institute the necessary measures to obtain all required permits and approvals.

2. The Company shall notify the Office of Industrial Siting Administration whenever it submits an application or receives a

permit or approval subsequent to the effective date of the Industrial Siting Permit which would materially alter the design, construction, or operation of the Exxon LaBarge Project. Such notification by the Company shall be deemed to constitute a request for amendment of the Industrial Siting Permit pursuant to W.S. 35-12-106(c) and W.S. 35-12-111(f), if the Council determines that such differences materially change the nature of the impacts associated with the construction or operation of the Project.

3. Before engaging in any Exxon-controlled activity which would affect the environment or the social and economic conditions, and which was not evaluated by the Council, Exxon shall prepare and file an evaluation of such activities with the Office of Industrial Siting Administration. When the evaluation indicates that such activity may result in significant adverse impacts which were not evaluated, or which are greater than those evaluated by the Council, then the Company shall obtain approval of the Council prior to undertaking the activities.

4. If unexpected harmful effects or evidence of irreversible damage are detected during facility construction, Exxon shall provide to the Office of Industrial Siting Administration an acceptable analysis of the problem and a plan of action to eliminate or significantly reduce the harmful effects or damage.

5. Exxon shall follow all practices and procedures as described in the Permit Application or Supplements, and as amended by Company commitments and by conditions imposed by the Council.

6. In the event that Exxon determines to cease construction of the LaBarge Project prior to mechanical completion, the following conditions apply:

   a. Exxon should agree to cause an orderly reduction in the resident construction workforce.

b. Exxon shall make up such shortfall in operating budgets due to impact commitments of local units of government (as determined by the Industrial Siting Council) and directly attributable to the cessation of construction attributable to Exxon for the remainder of the budget period during which the announcement of cessation of construction is made.

7. Exxon shall, at the time of commencement of construction, provide a letter of credit payable to the Office of Industrial Siting Administration from which local governments may recover expenditures in preparation for impact to be caused by the facility if the Applicant does not complete the facility. The letter of credit shall be in an amount to be determined by the Director of ISA as approved by the ISC, renewable annually. Recovery shall be limited as provided by W.S. 35-12-114(e).

8. Reports required to be submitted to the Office of Industrial Siting Administration may be in the same form as submitted to other state and/or federal agencies, except that all reports submitted to the Office must contain the information required by this permit.

9. Where conditions contained in this permit require Exxon to provide additional assistance beyond that already agreed upon in Exxon's mitigation program, such assistance may be provided where appropriate through in-kind assistance, financing assistance, technical assistance or other appropriate assistance rather than direct financial contributions.

10. Exxon shall comply with the terms of the Exxon Company USA LaBarge Project Mitigation Plan as agreed upon with local units of government and as presented to the Industrial Siting Council. The Mitigation Plan is hereby incorporated into this permit by reference.

Socioeconomic

1. Exxon shall not exceed 2,242 construction employees and 211 operating employees by 10 percent without an Amendment to the Permit pursuant to Section 12 of the Industrial Siting Act Rules and Regulations.

2. The second phase of construction on the gas processing modules at the Shute Creek site is scheduled to begin in 1989. Prior to commencement of that construction, Exxon shall reevaluate the socio-economic analysis conducted on the area of site influence and update any portions of that analysis that have significantly changed since preparation of the original Staff Review. Exxon shall meet with the Staff to determine the topics and level of analysis to be conducted. Based on these analyses, Exxon shall obtain approval from the Industrial Siting Council prior to commencement of construction of the second phase.

3. Exxon shall work with contractors and local financial institutions to the extent possible to establish methods for facilitating payroll check cashing procedures for construction employees. Exxon should also consider further utilization of local banking services for Company transactions.

4. Exxon shall provide some form of assistance to Lincoln County should the County encounter significant problems in the timely completion of the Courthouse expansion and renovation project or shall provide additional alternative space required to house staff as a result of the Project.

5. Exxon shall work with appropriate Kemmerer officials to determine how it can assist in the timely completion of the proposed municipal building or shall provide additional alternative space required to house staff as a result of the Project and how Exxon can assist in the provision of necessary additions to administrative staff.

6. Should the Town of Diamondville encounter funding problems that would delay the expansion of the Town Hall system, Exxon shall work with appropriate officials to determine how it can assist them with these projects.

7. Exxon shall monitor project-related growth in the Town of Granger and mitigate any resulting impacts to administrative services.

8. Exxon shall assist the City of Kemmerer by mitigating the demands that the LaBarge Project will place on the sludge disposal problem, the staff of the water and sewer plant, and the garbage collection crew.

9. Exxon shall assist Kemmerer and/or Diamondville in resolving any stormwater drainage problems related to community growth due to the Project.

10. Since the South Lincoln County Landfill is nearly full, Exxon shall assist Lincoln County and the City of Kemmerer in the acquisition, design, and permitting of a new landfill site that will accommodate de-watered sludge and the garbage of Exxon-related populations.

11. Exxon shall assure that an adequate sanitary landfill facility is available to any Exxon Project employee residing in the Town of Granger.

12. Exxon shall monitor the project-related growth in Granger and mitigate the demand on Granger's water treatment system.

13. Exxon shall be required to work with the Lincoln County Sheriff's Department to arrive at an equitable mitigation plan that will provide the necessary assistance in time to meet the projected period of peak demand in 1985.

14. Exxon shall address the project-related personnel needs of the Kemmerer Police Department by working with the appropriate local

officials to arrive at an equitable and timely mitigation agreement.

15. Exxon shall work with the Diamondville Police Department to determine appropriate mitigation of project-related staff needs in time to meet anticipated demand.

16. Exxon shall work with LaBarge officials and reach an equitable mitigation agreement concerning Project impacts on the Town's Police Department.

17. Project-related impacts on the Sweetwater County Sheriff's Department and Granger Police Department shall be monitored and mitigation assistance provided if it becomes necessary.

18. Exxon shall work with Green River officials to determine the form and extent of assistance that will be necessary to adequately mitigate project-related impacts on the Green River Police Department.

19. Should the South Lincoln Hospital District encounter funding problems in obtaining facilities for the proposed clinics in Kemmerer and LaBarge, Exxon shall provide assistance.

20. Exxon shall work with the Lincoln County Public Health Nursing Office to determine how it can best assist with alleviating project-related problem areas.

21. Exxon shall reach a timely and equitable mitigation agreement concerning anticipated impacts on the South Lincoln Mental Health Center in Kemmerer. Participation in employee assistance programs developed by the Center and the provision of mental health coverage within its employees' standard health insurance coverage should be considered as part of the mitigation package.

22. Should the Lincoln County Recreation Commission encounter problems in funding increased grant requests from communities within the area of site influence, Exxon shall assist the County in relieving this impact.

23. The population increases associated with the Exxon LaBarge Project are expected to intensify existing shortfalls in Kemmerer's parks and recreation facilities and create the need for additional facilities. The Company shall address this issue by developing a timely mitigation program in coordination with City officials.

24. Should LaBarge fail to obtain the necessary grant funds for its proposed ballfield complex, Exxon shall assist with this project.

25. The Town of Opal is not expected to receive significant impacts from the Exxon Project. However, should unanticipated impacts occur, Exxon shall provide some form of assistance.

26. Should unanticipated, Exxon-related impacts to Granger's recreational facilities occur, the Company shall address this problem through appropriate mitigation.

27. The Exxon Project is expected to increase the demand for recreational opportunities in Green River, regardless of whether or not the City actually experiences significant Exxon-related growth. The Company shall reach an equitable mitigation agreement with appropriate City officials.

28. Several health and human service agencies have noted that there is an existing and growing need for a facility in LaBarge which could be used exclusively for the outreach programs provided in the Town. Project-related growth from both plant construction and wellfield activity, will increase the demand for existing programs and create the need for program expansion. Exxon should work with affected agencies, possibly through the South Lincoln Human Resources

Confederation, to determine the extent of need and depth of support for such a facility. The Company shall assist with the provision of this facility if necessary.

29. Extensive mitigation programs should not be necessary to address Exxon-related impacts on the Lincoln County Office of Public Assistance and Social Services, Southwest Wyoming Rehabilitation Center, Community Services Block Grant program, and the Traveler's Aid Fund. However, Exxon shall provide grants after review and approval by the Council to these and possibly other human service programs, to assist them with project-related needs.

30. The Exxon LaBarge Project is expected to have a direct adverse effect on the Southwestern Wyoming Alcohol Rehabilitation Association. Exxon shall address these impacts by reaching an equitable mitigation agreement with SWARA officials.

31. Exxon-related impacts will intensify the Kemmerer Child Development Center's existing facility needs. The Company shall arrive at an equitable mitigation agreement with KCDC officials.

32. The Kemmerer Office of Western Wyoming Family Planning will be directly impacted by the Exxon Project. The Company shall provide mitigation assistance to the Agency.

33. The Exxon LaBarge Project is expected to have a direct impact on the services provided by The Turning Point. The Company shall work out a timely and appropriate mitigation agreement with Agency officials.

34. The Lincoln-Uinta Child Development Association may be adversely affected by project-related growth, particularly in the LaBarge area. Exxon shall monitor the situation and provide assistance to LUCDA should additions to staff become necessary.

35. The Exxon Project is not expected to have a substantial financial impact on the Lincoln County Vocational Rehabilitation office. However, it is hoped that Exxon will work with the Agency and take advantage of the benefits it can provide for Exxon's employees and Exxon itself.

36. Exxon shall work with County and State officials to monitor traffic impacts related to the Project. If problem areas are identified, the Applicant shall work with the Staff, the County, and the State to develop proper mitigating actions. Also, if it is determined that acceleration/deceleration lanes are required at key affected intersections, Exxon shall finance their construction.

37. The Applicant's Project will require a 10 mile paved access road from Wyoming State Highway 240 into the plant site. Exxon will fund up to 50 percent of the cost of the road with the remainder currently anticipated to be financed by the State and Lincoln County. Exxon will subsidize the County's share until ad valorem tax revenues are available.

38. Exxon shall devise alternate routing of over-sized loads so that problems with trucks utilizing the railroad crossing in Granger can be avoided.

39. Exxon shall provide Sweetwater County School District No. 2 a $200,000 grant to assist the District in responding to the anticipated impact of Exxon LaBarge Project construction. Exxon shall make payments to the District of $100,000 on August 1, 1984, and $100,000 on August 1, 1985.

40. The following sales and use tax conditions shall apply in order to maximize local sales and use tax receipts and impact assistance payments.

a. Exxon's contractors and subcontractors (as defined by 39-6-601) shall be required to have a sales and use tax license specifically for Lincoln, Sweetwater, and/or Sublette County immediately after the award of a contract. All purchases of materials shall be made on a Wyoming license and taxes shall be remitted under the County license where the materials are used. However, firms contracting to Exxon or its contractors in an amount of less than $50,000 shall still be subject to Wyoming tax law but shall be exempt from this Permit requirement.

b. The direct payment of tax technique, as defined by the Wyoming Department of Revenue and Taxation, shall be used by Exxon, its contractors, and subcontractors to maximize local receipts of sales and use taxes. Exxon shall contact the Wyoming Department of Revenue and Taxation to learn about the direct payment tax technique. Exxon shall require its contractors and subcontractors to contact the Wyoming Department of Revenue and Taxation to learn about that direct payment of tax technique immediately after the awarding of a contract.

c. Exxon, its contractors, and subcontractors shall report information on sales and use tax payments by license to the Industrial Siting Administration (ISA) as part of the monitoring process. Exxon shall provide written permission to the Industrial Siting Administration authorizing the Department of Revenue and Taxation to release tax payment information on the Project to the ISA.

d. Exxon shall notify the State Treasurer, the Wyoming Department of Revenue and Taxation, and the Wyoming Office of Industrial Siting Administration when construction commences on each phase and when each phase is 90 percent complete.

41. Exxon shall implement a monitoring program described in Section 7.2 of the Staff Review and shall submit that monitoring report

according to the schedule set out in Section 7.3.2.

42. In the event that before 1992 there occur any social or economic impacts on the local community, either within or outside Lincoln County (i) which adversely affect the current level of facilities and services provided by the local community, (ii) which cannot be allevated by financing through ordinary sources of revenue, giving due consideration to the bonding capacity and history of the local unit of government, (iii) which were not predicted in the Application, and (iv) which are not being or cannot be resolved by voluntary measures by industrial representatives in the Community, then the matter may be referred to the Industrial Siting Council for resolution. By order issued in accordance with the Wyoming Administrative Procedures Act, the Council may require additional mitigative action by Exxon in cooperation with other basic industries (existing and future), provided that: (i) a local entity has requested mitigative assistance, and (ii) such adverse impacts were determined to have occurred as the result of the activities of Exxon. Exxon shall be required to assist in mitigating the impacts that result from construction or operation of the proposed LaBarge Project, including from direct or indirect employment. In determining the additional mitigative assistance Exxon will be required to provide under this paragraph, consideration shall be given to previous mitigation efforts, both those that have been voluntarily undertaken and those required by any regulatory authority.

Environmental

1. Exxon shall provide ISA with copies of all applications for NPDES permits when they are submitted to the Department of Environmental Quality (DEQ).

2. A description of water treatment facilities, upstream of the plant evaporation pond for water from the service water/process drains shall be provided to ISA when available and shall include a

description of what the fate will be of all oils, solids, and other substances removed from the pond.

3. A complete analysis of predicted constituents and their concentrations in evaporation pond water shall be provided to the ISA.

4. The water quality monitoring program for the evaporation pond and evaporation pond seepage to determine effects on waterfowl shall be provided to WG&FD for approval and to ISA for review and comment (prior to implementation).

5. A contingency plan shall be provided to prevent the necessity of surface discharge from the evaporation pond.

6. Contingency protocol shall be developed to prevent contamination of groundwater by pond seepage.

7. ISA shall be provided copies of applications to DEQ for any hydrostatic test waters to be released, at the same time applications are submitted to DEQ. Release must be coordinated with Game and Fish Department and the State Engineer.

8. a. Exxon shall provide a list of quantities and types of refuse and garbage to be disposed as solid waste. A complete chemical analysis of all wastes shall be provided to the ISA before operations commence. This analysis must include not only bulk substances to be disposed but also potential contaminants in or on these substances.

   b. Exxon shall not utilize an existing landfill (e.g. the South Lincoln County Landfill) for solid waste disposal without prior approval of DEQ-SWMP.

   c. Prior to construction of a new landfill, either for construction or operations solid waste, Exxon shall submit to

ISA such information as required by the ISA rules and regulations for review and approval of the site for aspects not covered under DEQ-SWMP purview.

9. Construction workers must be provided with basic protection from accidents and other trauma. To accomplish this objective, Exxon will participate in the Employer Voluntary Technical Assistance Program (EVTAP) administered by the Wyoming Occupational Health and Safety Department. All contractors will be required to fulfill the requirements of EVTAP. Exxon's implementation of this program will be keyed to the three phases as specified in the program.

10. During operation of the plant, workers must be protected from unnecessary trauma through adequate safeguards. The Staff recommends that Exxon voluntarily continue its cooperation with OHS, Technical Assistance Division, in developing a health and safety plan that is applicable to the operation of the Shute Creek facility.

11. During construction, monitoring by Exxon shall insure contractor compliance with the safety program and specify corrective action to be taken in the event that monitoring detects safety plan violations.

12. The Staff recommends that Exxon develop not only a worker health and safety plan, but also a program to insure that unnecessary risks are not incurred by the public. This program should fulfill requirements of all federal, State, and local agencies involved with the Project; must cover all aspects of plant safety; and must include both a construction plan and an operational plan. These plans should identify all critical areas of concern, propose methods by which hazards will be mitigated, and describe comprehensive off-site and on-site monitoring programs. The construction plan should be developed before July 1, 1984, and

should address traffic control, road and highway improvements, plant site access, and hazardous material protocol. The operational plan should be developed prior to operational start-up and should address: seepage into surface and groundwaters, gaseous leak detection, and accident and contingency protocol.

13. The quality of water in both retention ponds during the construction phase shall be monitored for total suspended solids, and oil and grease prior to release. Exxon shall comply with any reporting requirements of DEQ-WQD for discharge from the sediment retention ponds. Discharge water shall not contain concentrations of total suspended solids that exceed 30 mg/1 (as required by DEQ) nor concentrations of oil and grease that exceed 10 mg/1. Should water quality not meet these specifications, it shall not be discharged into Shute Creek. Rather, it shall be treated and disposed in some other way. This condition must also be adhered to during operation of the plant. To protect wildlife habitat values in Seedskeedee National Wildlife Refuge, a water quality monitoring program shall be developed for assuring compliance with water quality standards as set by DEQ for Class III streams. Should these standards not be met, water shall not be discharged from the sediment retention ponds into Shute Creek but instead shall be treated and disposed in some other way.

14. Results of all required water quality monitoring programs shall be provided to ISA in a timely manner.

15. Before operation commences, Exxon shall provide ISA with estimates of the amounts and kinds of chemicals to be delivered to the plant by rail and highway. Spill clean-up, accident, and safety protocol shall be provided with these estimates.

16. ISA will review details for the submitted location prior to the commencement of construction of the sour gas pipeline. Exxon agrees to the extent practicable and feasible to incorporate ISA recommendations.

17. Special design techniques shall be employed at perennial stream crossings by the sour gas pipeline to minimize the risk of leaks or ruptures particularly at LaBarge and Fontenelle creeks.

18. Either the access road will be relocated outside of the 100 year flood plain or it shall be designed to the extent practicable and feasible for flood control in accordance with Exxon's agreement with Lincoln County.

19. Both retention ponds shall be constructed before commencement of other construction in their respective areas.

20. Stream channels shall not be altered and heavy equipment shall be kept out of stream beds and riparian zones whenever possible.

21. Exxon shall participate in the Forest Service monitoring program for effects of acid deposition in wilderness areas. Exxon shall submit copies of all reports to the ISA Staff.

22. Exxon shall participate in a program to ascertain the degree to which the LaBarge Project is contributing to acid rain effects in the area of site influence. It is possible that a State-coordinated project to analyze impacts from acid rain will be conducted in the near future. A commitment from Exxon to participate in this project, if and when it is implemented, to a degree commensurate with other industry involvement would satisfy this recommendation.

23. Should adverse impacts from acid deposition in the Fitzpatrick or Bridger Wilderness areas become apparent and attributable to Exxon's LaBarge Project, Exxon will initiate remedial action in proportion to its contribution to such adverse impacts. Such remedial action may include working with other sulfur dioxide emittors to reduce the other emittor's SO_2 emissions. However, any

change in control technology must be approved by the Air Quality Division of the Department of Environmental Quality.

24. Field work and on-site mitigative action for any area of disturbance at the plant site or rail spur must be completed to the satisfaction of SHPO and the BLM before construction begins in that area. Furthermore, ISA must be furnished, and the SHPO must approve all reports and results of cultural work.

25. An analysis of impacts and mitigation plans for all cultural resources, prehistoric and historic, along the transmission line, product pipelines, and the sour gas pipeline shall be provided to the ISA prior to commencement of construction on those facilities. Clearance for all these facilities shall also be granted by SHPO and BLM prior to the start of construction along these rights-of-way.

26. Site-specific descriptions of all the emigrant trail and stage route crossings, expected impacts, and proposed mitigation shall be provided to ISA before commencement of construction of linear facilities. Again, all crossings must meet criteria as set by SHPO and BLM.

27. Exxon shall make every effort to prevent excessive or unnecessary disturbance to areas that contain evidence of historic or prehistoric cultural use. These areas on the plant site should be fenced to prevent trampling and off-road vehicle use until cultural mitigation is complete.

28. If the Industrial Siting Application had contained the required information on cultural resources, the costs to SHPO of conducting required reviews would have been recovered from the initial filing fee. However, this was not the case. Therefore, Exxon shall reimburse SHPO for reasonable costs associated with any reviews required subsequent to issuance of the Industrial Siting Permit.

29. To minimize erosion, Exxon shall stabilize or reclaim all disturbances as soon as possible.

30. A 100-year floodplain map shall be prepared for Shute Creek and its main tributary for all areas where the railroad/access road/transmission line right-of-way comes within 1 mile of Shute Creek or its main tributary. In computing the 100-year floodplain in Section 14, Exxon shall consider the effects of the north-south road and the culvert under the road.

31. All suitable topsoil should be removed from all disturbances except the transmission lines and pipelines. For the Shute Creek plant site and mancamp, all suitable topsoil shall include approximately 6 inches of the surface soils in the Bittercreek (2B) and Sandbranch (3A) soils and three feet from the surface of the Kandaly (5E) and Terada (1B) soils. Topsoil should be stockpiled and protected for future use in reclamation.

32. Exxon shall design the Shute Creek Plant to withstand an earthquake of intensity VII on the Modified Mercalli Scale, equivalent to 5 to 5.5 on the Richter Scale.

33. Exxon shall include seismic protection in the design of the sour gas pipeline.

34. The construction manager, based upon advice from the reclamation specialist at the plant site, shall be given the responsibility and all associated authority to supervise topsoil stripping, site grading, and all other construction activities that may influence the environmental integrity of the plant and the construction camp. The reclamation specialist shall also serve as the major contact from Exxon for reclamation issues.

35. Topsoil analyses for fertility should not be made until the stockpiled topsoil is spread for final reclamation seeding.

36. The proposed seed mix shall be modified by removing crested wheatgrass. The plant site final reclamation seed mix shall include at least one forb and one shrub.

37. Reclamation success at the plant site should be determined statistically by comparing post-reclamation cover, productivity, and diversity with data from undisturbed comparison areas which shall be selected during summer, 1984.

38. Exxon shall submit a final reclamation plan for the plant site, construction camp by June 1, 1984 and railroad by October 1, 1984. The plan shall include at least the following:

    a. final contour maps of all disturbed areas plus the necessary distance on all sides to blend with natural contours, showing the post operation contours after removal of structures, pavement, and ponds, and after contouring of all slopes to less than five horizontal to one vertical (5:1) or no greater than pre-construction slopes;

    b. a commitment that substances harmful to vegetation, wildlife, or livestock will be buried to a depth that would render that substance harmless and yet not contaminate groundwater;

    c. a commitment to replace stockpiled topsoil, protect the topsoil by mulching or other measures and seed the topsoil. Seed species, rates, and revegetation will be agreed upon with the ISA. Dates of seeding will be agreed upon with the ISA at the time reclamation takes place;

    d. a commitment to fence all reseeded areas except the railroad and access road until a sustaining stand of vegetation has become established;

    e. a commitment to engage the reclamation plan upon termination of the Project; termination of the the Project is hereby

defined as the cessation of construction or operation of the plant for a period of 2 years; the Council may extend such time period upon a satisfacory showing that an extension is justified;

f. a commitment that all above ground structures will be removed and all disturbances will be reclaimed;

g. a commitment to establish vegetation productivity and species diversity at the plant site to be determined from data to be gathered from comparison areas beginning two years prior to start of reclamation.

h. a sequence for reclamation of all disturbances.

39. Regarding linear facilities, Exxon shall exert its best efforts to ensure that ISA comments are considered.

40. Besides the measures identified in the Riley Ridge EIS-Record of Decision to reduce land use impacts, the following additional measures shall be implemented:

a. the Project shall designate a lands representative to the ISA and to private landowners; this representative shall have the responsibility of insuring compliance with land-related voluntary commitments and permit requirements and have the authority to respond to landowner complaints;

b. except for emergencies, prior to entering upon private land for construction, inspection, or maintenance activities, the Project shall attempt to inform affected landowners, their tenants, agents, or representative that project personnel will be on the property and shall specify the date(s) of entry, purpose, and expected period of time on the property;

c. the Project shall notify the landowner when and for how long there will be an open trench on the property;

d. to the maximum practical extent, the Project shall minimize its entry upon wet or muddy grounds on private property;

e. if control of weedy or noxious plant species becomes necessary, then the Project shall use only those herbicides that are approved by federal, State, and local authorities and shall consult with affected landowners prior to the application of any herbicides; and

f. the Project shall prepare a plan to be submitted to the ISA for control of unauthorized construction worker parking at isolated job sites.

41. Exxon shall contact all private landowners within one mile on either side of the sour gas pipeline, regardless of whether the landowner is crossed by the pipeline. To the extent practicable and feasible, Exxon shall consider the landowner input.

42. Exxon, through its Environmental Awareness Training Program, shall inform its employees of the high risk of vehicle-wildlife collisions in the area and the hazards to human life of hitting a big game animal. Additionally, to draw pronghorn away from the plant site and roadways and to mitigate for habitat lost at the plant site, Exxon shall coordinate with the Wyoming Game and Fish Department to construct water developments or guzzlers on pronghorn summer range in the area.

43. Exxon shall utilize a seed mix of plant species which are relatively unpalatable to big game and livestock for use along access road rights-of-way. Specific plans for reseeding access road rights-of-way shall be developed in conjunction with the Wyoming Game and Fish Department.

44. In order to avoid adverse impacts on sage grouse and their breeding complexes, Exxon shall:

a. route around sage grouse leks;

b. restrict vegetation disturbance within and adjacent to breeding complexes to the minimum necessary (i.e.: no laydown areas or permanent access roads within the breeding complexes);

c. not employ vegetal control without ISA approval within or adjacent to rights-of-way traversing breeding complexes; and

d. revegetate only with approved native plants within or adjacent to these complexes. Plant species included in the seed mix for revegetating disturbed areas within breeding complexes shall be approved by the Wyoming Game and Fish Department

e. from March 1 through June 30, there will be no activity within 1/2 mile of sage grouse leks during the hours of 4:30 a.m. to 8:30 a.m. unless otherwise approved by Wyoming Game and Fish.

45. If the water quality of the plant site ponds reaches a point whereby the ponds are deemed potentially detrimental to waterfowl and shorebirds by the WG&FD, then Exxon shall utilize sufficient deterrents to keep waterfowl and other birds from utilizing the ponds. These deterrent measures shall be determined in coordination with the Wyoming Game and Fish Department, only if they become necessary.

46. Exxon shall support big game monitoring in the Lake Ridge, Fogarty Creek, Graphite, and Dry Piney units of the Riley Ridge wellfield. Monitoring shall begin in the spring of 1984 coincident with the elk calving period, and shall continue through the wellfield construction period. Monitoring methodology, timing, and dates

shall be coordinated with and approved by the Wyoming Game and Fish Department. Monitoring results shall be provided to the ISA as soon as possible after completion of individual surveys. Specific mitigation measures must be agreed upon by the Wyoming Game and Fish Department.

47. As described in Section 5.8.2 of the Staff Review, Exxon shall enter into a cooperative monitoring and mitigation program with the other companies proposing major developments in the area, if and when these other projects begin development. However, Exxon should approach all companies actively proposing major developments in the Riley Ridge area to determine the feasibility of early implementation of the program. The program should be coordinated with the ISA, the Wyoming Game and Fish Department, and federal land management agencies and must be approved by the ISA prior to implementation.

48. Exxon, in cooperation with the Wyoming Recreation Commission, the Forest Service, the Bureau of Land Management, and the Bureau of Reclamation, shall develop and implement a mitigation plan that addresses the impact of the LaBarge Project on developed recreational resources and to submit this plan to the ISA for approval prior to July 1, 1984.

49. Exxon shall coordinate with the Bureau of Reclamation to develop a plan to ensure that facilities at Fontenelle will not be used as a permanent residence by workers during the construction period. This plan shall be submitted to the ISA for approval prior to July 1, 1984.

50. As part of its socioeconomic monitoring program, Exxon shall implement, in coordination with the WG&FD and the ISA, a survey to determine the hunting and fishing demand of the construction workforce.

51. Exxon has committed to coordinate with the WG&FD to define appropriate levels of game enforcement assistance but has not specifically agreed to financial assistance. An acceptable mitigation agreement with the WG&FD shall be submitted to the ISA for approval prior to the onset of construction.

52. In order to deter employees from violating game and fish laws, Exxon shall develop a policy applicable to the LaBarge Project workforce that considers conviction of a major game violation as possible grounds for dismissal. This mitigation measure will also be followed by Exxon.

53. Exxon shall require participation in a Game and Fish Department approved Environmental Awareness Program by all contracted and permanent employees. The program selected shall be coordinated with the Wyoming Game and Fish Department and shall be submitted to the ISA for approval prior to implementation.

54. Exxon shall be required to develop an Environmental Control Program to insure compliance with voluntary commitments and permit stipulations. A Program Coordinator should be designated and identified to the ISA. This on-site Coordinator should assume the responsibility for assuring that contractors and subcontractors are aware of and meet all Exxon commitments and permit requirements; that all environmental monitoring is conducted in accordance with agreed specifications; and that coordination with the ISA occurs before any deviations from the Permit Application or permit stipulations.

55. The Company shall submit annual environmental reports on or before March 31st of each year. The annual reports shall include results of all environmental monitoring and shall contain such detail as the Staff may require, supplemented with maps, cross sections, aerial photographs, or other materials. The annual reports shall include:

a. environmental planning efforts not described in the Application;

b. efforts to identify and minimize environmental problems;

c. efforts to assure compliance with permit conditions required by the Council and status of all environmental permit conditions as applicable;

d. results and analyses of all monitoring programs described in Section 7.1 of the Staff Review;

e. results of the specific mitigation requirements contained herein;

f. listing of all permits and approvals obtained during the preceding year, all applications pending, and all permits and approvals for which application will be made in the following year;

g. the extent to which construction has been completed or, during operations, the rate of production;

h. a map showing all land disturbances in the previous year and progress of all reclamation work;

i. any revised time schedules or time tables of construction, operations, and reclamation, and an estimate of the construction and reclamation that will occur in the next 1 year period; and

j. the extent to which expectations and predictions made in the Application or previous reports have been fulfilled, and any deviation therefrom.

56. Any conditions requiring evidence of approval or requiring the preparation of plans or programs for ISA approval before implementation shall be provided with adequate lead time for ISA review.

57. As soon as possible after the submittal of each Annual Environmental Report and as may be necessary at other times, the ISA Staff may conduct an inspection of the project site to determine if construction and reclamation are being conducted according to the Application, the Permit, and permit stipulations. Annual inspections will be conducted with reasonable notice to Exxon and travel and per diem expenses shall be reimbursed by Exxon.

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